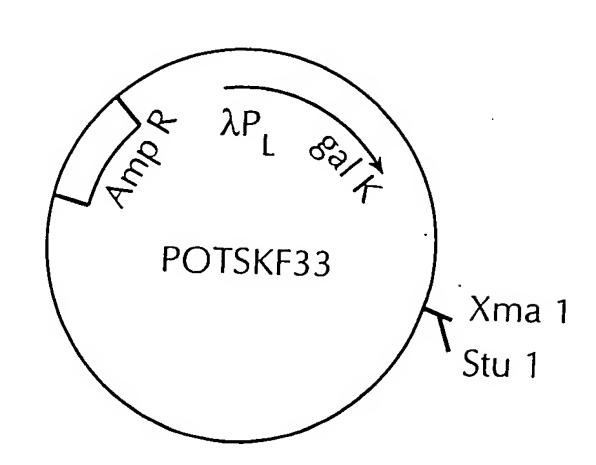
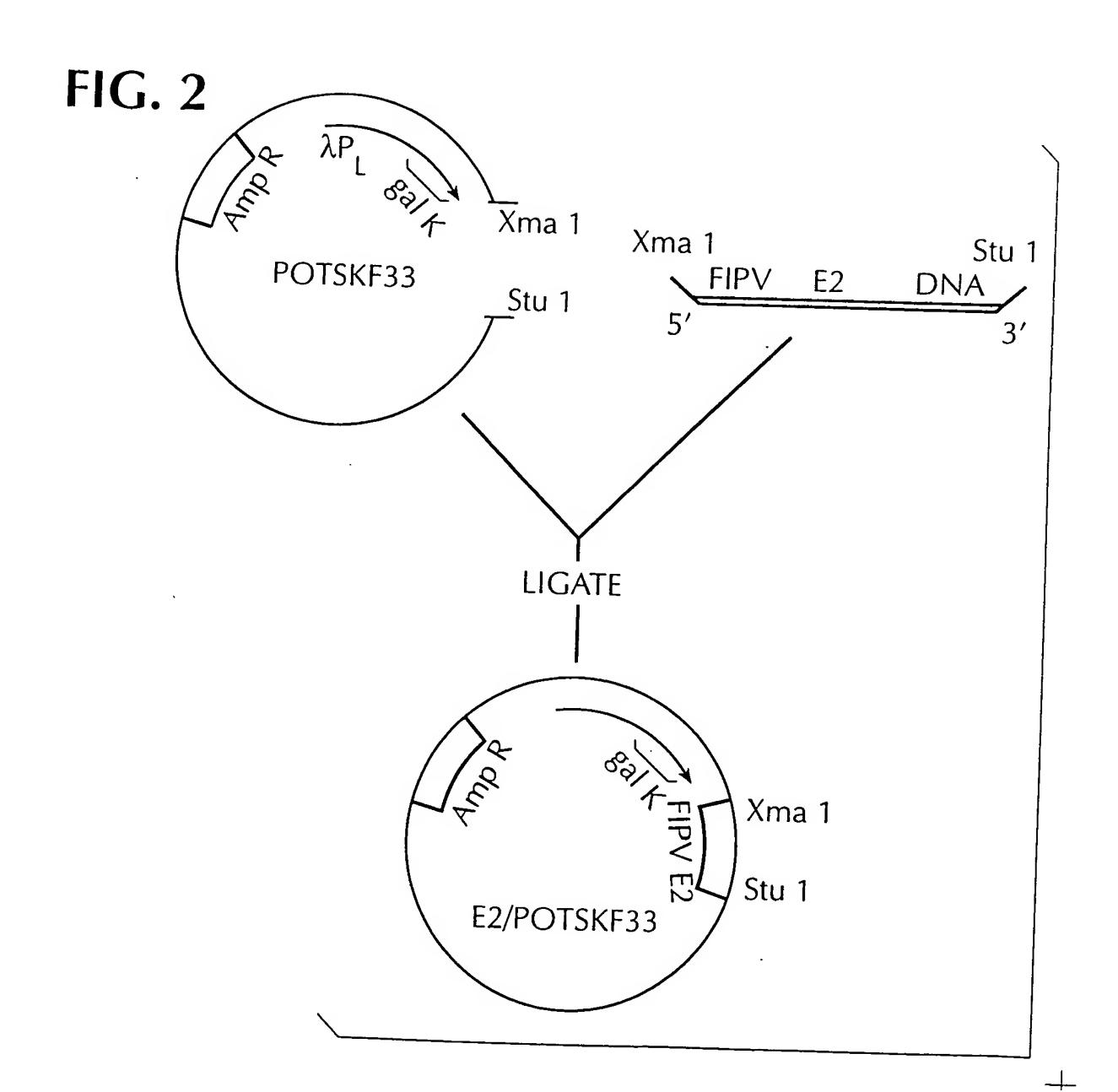
FIG. 1





	39	78	117	156	195	234	273
	TTT Phe	CAG Gln	GAC Asp	$\mathtt{TAT}$	GCA Ala 65	CCT Pro	GAT Asp
	CTG Leu	ATT Ile 25	ACC Thr	GAT Asp	AAT Asn	GAG Glu	GAT Asp 90
	TCT Ser	ACC	CAC	ATT Ile 50	GGT Gly aa	GGT G1y	AGG Arg
	CAA Gln 10	CAC	GAA Glu	GCG	ACT Thr ↑ FIPV	CAT	TAT Tyr
0 0 0	ACA Thr	ACT Thr	GGT G1y 35	TGC Cys	a G GGC g Gly 0 first	GTG Val	GCT Ala
<b>ne</b> sequence sequence	AAA Lys	GCC Ala	ATT Ile	CCC Pro	Xma CGG Arg 60 fi	CAT His 75	TCG Ser
	GAA Glu	CCT Pro 20	TTG	CTG	ACC	TTT Phe	ATA Ile 85
t ac	CAA Gln	TAC Tyr	AAT Asn	GTT Val 45	AAT Asn	TTA Leu	TAT Tyr
<b>essio</b> nucle amino	TTC Phe 5	GGC Gly	GTG Val	rrc Phe	CCT	TTA Leu 70	ATA Ile
expression 19- nucleo 20- amino	GAA Glu	TTT Phe	CGC Arg 30	GGT G1y	ATC Ile	CCA Pro	ATT Ile
<b>PCR 6</b> NO: 1 NO: 2	CCC	GCA Ala	ĠĠC Gly	GAC Asp	GTG Val 55	AAA Lys	GTT Val
8-3 E-3 E-10 E-10 E-10 E-10 E-10 E-10 E-10 E-10	GAT Asp	AAC Asn 15	CCT Pro	AAC Asn	ACC Thr	GGT Gly	AGT Ser 80
<b>AR58</b> SEQ SEQ	ATG Met	GCC Ala	GGC Ala	TAC Tyr 40	CAA Gln	CGT Arg	GTT Val

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312	351	390	429	486	507	546	573
TGT	GCC Ala	AGA Arg	GGA Thr	ACA Thr	AAT Asn	CGC Arg	
GTG Val	TTC Phe	GAC Asp 130	ACA Gly	GTT Val	ATC Ile	TCA	
TTA Leu	CAA Gln	GCT Ala	AAT Asn	TTT Phe	AAC Asn	TAT Tyr 180	
666 61y	GAA Glu 115	GGT Gly	GAC Asp 140	GAC Asp	TTG	TTG Leu	ന
CAT His 100	TAT Tyr	ACG Thr	ACG Thr	GAT Asp	CAC His 165	CTT Leu	I TAG End PV aa
AAA Lys	AAC Ser	TGT Cys 125	CCC Pro	AAT Asn	TAT Tyr	ACA Thr	GCC Ala FI
TTA Leu	ATT Ile	ACA Thr	ATA Ile	TGG Trp 150	TCT Ser	GTC Val	SGAG Glu Last
CTT	CAT His 110	TCC Ser	GTC Val	GAG Glu	CGT	AAT Asn	TGG Trp
CCC	CGC	AAT Asn	TCT Ser 135	CTT Leu	GGT G1y	AAC Asn 175	ACC Thr
AGG Arg 95	AAT Asn	TGG Trp	TTC Phe	GGT Gly	AGT Ser 160	TTT Phe	GCT Ala
CAA Gln	AAA Lys	CAG Gln 120	CCC Pro	TAT Tyr	ATT Ile	TGG Trp	ACT Thr 185
CAA Gln	ACT Thr	AAC Asn	ATT Ile	ATC Ile 145	TAT Tyr	AAT Asn	AGC
GTG Val	ATA 11e	TCC Ser	AAA Lys	AAA Lys	GCT	ACT Thr 170	AGC Ser

#### FIG. 4A

DF2 FIPV, nucleotides 1- 4365 [SEQ ID NO:21] DF2 FIPV, arnino acid 1- 1454 [SEQ ID NO:22]

DF2-HP, nucleotides\* 1- 2246 [SEQ ID NO:23] DF2-HP, amino acids\* 1- 748 [SEQ ID NO:24]

48 ACA Thr CAC His 15 TAC Tyr TCA TGT Leu TTA TTG Leu 10 TTGLeu CTC Leu TGC Cys ACT Thr GTA Val Ŋ CTCLeu GTG Val ATT Ile ATG Met 4

96 CAA Gln ACA Thr GTA Val 30 Asn AAC GTT Val Gln CAA ATA Ile Cys 25 TGC GAA Asn AAT AAT Asn ACA Thr ACA Thr 20 AGT Ser Leu TTG GTT Val

144 TTTPhe Asn AAC AGT Ser Phe 45 LLL CTGLeu TTTPhe Asp GAT AGA Arg ATC Ile 40 CTT Leu Asn AAC GAA Glu AAT Asn G1*Y* 35 GGC GCT Ala TTG Leu

192 GTG Val GAG Glu ACA Thr CCT TYT 60TAC TAT TyrGGT G1yGGT Gly GTT Val GTT Val 55 GTA AGT Ser G1yGGA GAA Glu Glu 50 GAA AAA Lys

240  $\mathrm{LLL}$ Phe 80 TAT Tyr CAG Gln LLL Phe GCC Ala  $\operatorname{Thr}$ ACT 75 ACT Thr Arg\* CAA Gln \* U \* [4 GCA Ala ACA Thr Arg 70 AGA TCT Ser CysTGC Asn AAC TAC TyrTrp 65 TGG

288 AGC Ser Asn 95 AAT GAA Glu ATG Met GCC Ala GAA ATG Met 90 GTT Val TTTPhe TAT TYTTTTPhe Ala 85 CCC CAT His ATA Ile AAT Asn AAT Asn

#### FIG. 4B

336	384	432	480	528	576	624
GAG	CAA Gln	CGC	TGT CVS 160	AAT	GCT	TTT Phe
GGT G1y	GTG	AAT Asn	ACA	GAC ASP 175	ACA Thr	TGG
CAT His 110	GAT	AAA Lys	TCC	ACG Thr	GTT Val	AAT Asn
GTG Val	GAT ASP 125	ACT Thr	AATASN	CCC Pro	TTT Phe	ACT Thr 205
CAT	AGG Arg	ATA 11e	TGG	ATA Ile	GAC	AATAsn
TTT	TAT	TGC	CAG Gln 155 118	GTC	GAT	ATC Ile
TTA	GCT Ala	GTG Val	7 U = #	TCT Ser 170	AAT Asn	AAC
TTA Leu 105	TCG	TTA	TCC ASSET ASARS ARS ARS ARS ARS ARS ARS ARS ARS A	TTC	TGG Trp 185	TTG Leu 64
CCA Pro	ATA 11e	GGG G1y	ACC Thr	CCT	GAG	CAC T' His L 200 8-3 . #164
AAA Lys	TAT Tyr	AAA CAT Lys His <b>Glu*</b> 135	TTC Phe 116	ATT Ile	CTT	TAT CA  TVE Hi 20 AR58-3 a.a. #
т GGT 9 Glу #62	ATA Ile	AAA Lys <b>Glu</b>	CAA TT( Gln Pho 150 ↑ AR58-3 a. #116	AAA Lys	GGT G1y	TCT
וע פי	ATT Ile	TTA	GAA CG1u GA AA.	AGA Arg 165	TAT	CGT
T GCA CC n Ala Al 100 1146 -3; no acid	GTT Val	CTT	TAT	GAC ASD	ATC Ile 180	GGT GLV
AAT ASn SU 1 58-3	AGT Ser 115	CCC Pro	AAC	GCT Ala	AAA Lys	AGT Ser 195
ACT GGT AAT GThr Gly Asn A  1 97 of WSU 114 FIPV in 58-3; AR58-3 amino	CCT GTT Pro Val	CAA AGG Gln Arg 130	CAT ATT AAC His Ile Asn 145	ACG GGT Thr Gly	GGA ACA AAA Gly Thr Lys	TAT ATT AGT TVr Ile Ser 195
ACT Thr 97 97 AR5	CCT	CAA Gln	CAT His 145	ACG	GGA G1y	TAT

FIG. 4C

672	720	768	816	864	912	096	1008
GAA Glu	TAC Tyr 240	GAT	TCA Ser	CTT Leu	CCA Pro	GCA Ala 320	GTG Val
TGG Trp	TAT Tyr	GAA Glu 255	ACA Thr	TTG	CAA G1n	GCA Ala	GGT G1y 335
ACC Thr	ACT Thr	TGT Cys	CCG Pro 270	TTC Phe	AAT Asn	GTA Val	AAT Asn
GCT Ala	TTC Phe	rra Leu	GCT Ala	TGG Trp 285	ACA Thr	GGT G1y	TGT Cys
ACT Thr 220	AAC Asn	GAA Glu	TTT Phe	, AAT Asn	GTA Val 300	TTT Phe	CAA G1n
AGC Ser	TCT Ser 235	$\mathtt{TAT}$	GTA Val	AAC Asn	TTT Phe	AGT Ser 315	AGC Ser
TCA Ser	GTT Val	ACC Thr 250	AAT Asn	TTT Phe	AGG Arg	CCC	TTT Phe 330
CGC Arg	GGT Gly	AAA Lys	ACC Thr 265	AGT Ser	GGC Gly	GTG Val	CAG Gln
TCA Ser	CAA Gln	CTA Leu	GCT Ala	TTT Phe 280	AGT Ser	CCA Pro	GCA Ala
TAT Tyr 215	TAC	GGT G1y	TAT TYY	GGA G1y	GTT Val 295	TGG Trp	GGT Gly
TTG Leu	GCT Ala 230	AAT Asn	GGC Gly	GAT Asp	TTT Phe	TTG Leu 310	GAA Glu
CTT Leu	TAT Tyr	ACC Thr 245	ACT Thr	CCT	ACT Thr	TGC Cys	TTT Phe 325
ACA Thr	GCA Ala	AAC Asn	TGC Cys 260	ATA Ile	TCC Ser	AAT Asn	TGT Cys
GTC Val	GCT Ala	AAT Asn	CAT His	TAC Tyr 275	AGT Ser	ATT Ile	TTT Phe
AAT Asn 210	AGT Ser	TTA Leu	GAA Glu	GGT Gly	AAT Asn 290	rrg Leu	GAA Glu
AAC Asn	TAC Tyr 225	AAG Lys	$\mathtt{TAT}$	GGT	ACA Thr	TTA Leu 305	CAA Gln

1056	1104	1152	1200	1248	1296
ACT Thr	ACA Thr	AGT Ser	GAC Asp 400	TAT Tyr	TGG Trp
TTC Phe	AAT Asn	GTG Val	ACT	AAA Lys 415	AAG Lys
AAT Asn 350	CTG	ACA Thr	ATA Ile	CTT Leu	AGT Ser 430
CTT	TCA Ser 365	GAC Asp	66C 61y	GCT	ATT Ile
AAC Asn	TTT Phe	AGT Ser 380	TTC Phe	ACA Thr	GCTÀla
TTC Phe	GTA Val	$\mathtt{TAT}$	CCG Pro 395	66C 61y	ATT Ile
AGA Arg	* ACA Thr	TGT Cys	ATC Ile	AAT Asn 410	GAA Glu
ATT 11e 345	GCT Ala	TCA	GAA Glu	TAC Tyr	AAG Lys 425
GTT Val	GGT G1Y 360	ATT Ile	GGT Gly	CTT Leu	GTA Val
GAT Asp	ATG Met	GAA Glu 375	TAT $TYx$	GTA Val	AGT Ser
GTG Val	GGT G1y	CTT	AGT Ser 390	TAT $TYT$	CCC
ACA Thr	TCT Ser	ATT Ile	TAC	TGT Cys 405	CCA Pro
AAC Asn 340	CAA Gln	GTC Val	TCT	$\mathtt{TAC}$	TTA Leu 420
AAT Asn	GTA Val 355	GGT Gly	AGT	CGA Arg	ACA Thr
TTA	GAT Asp	GGT G1y 370	TCT	CCA	GGA Gly
TCT Ser	GCA Ala	ACA Thr	GAG Glu 385	GGA Gly	TTA Leu

#### FIG. 4E

1344	1392	1440	1488	1536	1584	1632
ATT Ile	TGG Trp	AAC Asn 480	ATT Ile	GTT Val	CCT Pro	ATG Met
CCT Pro	TTT Phe	GAA Glu	AAC Asn 495	CCT Pro	TTA Leu	GGT
TTT Phe	GCT	GTT Val	AAT Asn	TAT Tyr 510	TTA Leu	CTT Leu
ACA Thr 445	GGA Gly	CAA Gln	ATT Ile	TTT Phe	GTG Val 525	GAT
AGC Ser	AGT Ser	GTA Val	CAC His	GGA Gly	GTT Val	ATT Ile 540
TTT Phe	T* GCT Ala Val*	TTA Leu 475	AGT Ser	AAT Asn	AGT Ser	ACC Thr
TTC Phe	GGT Gly	GCA Ala	AAC Asn 490	AAT Asn	AAG Lys	ATA Ile
AAT Asn	ACT Thr	GAA Glu	TGT Cys	TTG Leu 505	AAT Asn	AAT Asn
TAC Tyr 440	ACC Thr	ACT Thr	TAT Tyr	AAT Asn	GТТ Val 520	GTC Val
GGT Gly	TTA Leu 455	TAT Tyr	ACG Thr	GCT Ala	TTC	GCT Ala 535
AAT Asn	AAT Asn	TCG Ser 470	GTG Val	ACT	GGT	ACC Thr
ATT Ile	TTT Phe	ACA Thr	AAT Asn 485	CTT Leu	GTA Val	T* CAC His
$\mathtt{TAT}$	TCT Ser	$\mathtt{TAC}$	AAA Lys	CAA G1n 500	GAA Glu	ACA Thr
TTT Phe 435	ATA 11e	GCT Ala	ATT Ile	TCT Ser	AGT Ser 515	TTC Phe
CAT	TGT Cys 450	ATT Ile	GCT	TGT Cys	TCA Ser	ттт Рће 530
GGC Gly	GGT	ACA Thr 465	ACA	AAA Lys	GCT Ala	AGC
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#### FIG. 4F

1680	1728	1776	1824	1872	1920	1968	2016
ATC Ile 560	TCT	TGG Trp	GCT Ala	AAT Asn	GCT Ala 640	GTT Val	GGT Gly
AAC Asn	CGT Arg 575	TTA	ACA Thr	AAC Asn	GGT Gly	CAG Gln 655	GTG Val
AGT Ser	ATT Ile	TCT Ser 590	GCT Ala	TTG	GTT Val	GAG Glu	ATA Ile 670
CTA Leu	TGT Cys	AGT	GAG G1u 605	AAA Lys	CCT	AAT Asn	AAC Asn
ACA Thr	TAC Tyr	AAA Lys	TTA Leu	GAT Asp .620	AGT Ser	ACC Thr	GAC Asp
TCG Ser 555	GTG Val	TGC	GTT Val	TTT Phe	TTG Leu 635	AGA Arg	GGA Gly
GCC Ala	GAT Asp 570	ACT Thr	GAT	TCA Ser	TCG Ser	ACA Thr 650	GAA Glu
ATA Ile	ACT Thr	TCC Ser 585	ACG Thr	TTC Phe	TTG	CGT Arg	GAA Glu 665
CCC Pro	AAT Asn	A* CCT Pro His	TGC Cys 600	CCT Pro	TGT Cys	GCA Ala	TAT
CAA Gln	AAC Asn	GTT Val	GAC Asp	TGT Cys 615	TTC Phe	GCT Ala	ATA Ile
GGT G1y 550	GAT Asp	TAT Tyr	CAA	ACT Thr	AAG Lys 630	GTT Val	GTA Val
$\mathtt{TAT}$	CAG Gln 565	GTT Val	AAT Asn	GGT G1y	AAC	GAT Asp 645	TAT Tyr
$ ext{GGT}$	ATG Met	TCA Ser 530	TTT Phe	ACT Thr	TTT. Phe	TTT Phe	CTA Leu 660
AGT Ser	CCA Pro	TTC Phe	ATT Ile 595	AAA Lys	ACT Thr	AAG Lys	AGT Ser
CTT Leu	CTA	CAA	AAT Asn	ATA Ile 610	TTG Leu	TGC Cys	AGA
AAG Lys 545	ACA Thr	AAC Asn	GAC	GTT Val	TAC Tyr 625	AAT Asn	GTT Val

2064	2112	2160	2208	2256	2304	2352	2400
CTA	ATT Ile	TCA Ser 720	ATT Ile	GATASp	GGT Gly	$\mathtt{TAT}$	GAT ASP 800
CAC His	GGT Gly	ACA Thr	GTC Val 735	ATT Ile	TTA Leu	ATA Ile	AAC Asn
CTA Leu	GTT Val	TAC Tyr	GGT Gly	GTT Val 750	CTG	TCT Ser	AGT Ser
GTG Val 685	GGT Gly	TAT Tyr	GAT Asp	GCT Ala	GAA Glu 765	TAC Tyr	GAC Asp
TCT Ser	ACT Thr 700	TTA Leu	AGT Ser	GCG Ala	AGT Ser	TAC Tyr 780	ATT Ile
TTG	AGA Arg	GGC G1 <sub>Y</sub> 715	GTT Val	CAA Gln	AAC Asn	TAT Tyr	GCA Ala 795
GAT Asp	GGT Gly	AGT Ser	AAT Asn 730	GCA Ala	ATT Ile	TT~ Ph~	ACt Tht
CAC	$\mathtt{TAT}$	CTT Leu	AAA Lys	AGC Ser 745	TCC Ser	AAT Asn	GGC
CTG Leu 680	ATA Ile	CTA Leu	TTT Phe	GTA Val	ACT Thr 760	CCT Pro	CGT Arg
GGT Gly	AAT Asn 695	ACG Thr	GGC Gly	GAT Asp	ATG Met	ACA Thr 775	ACT Thr
AGC	TAC	AGT Ser 710	TTA Leu	TGT	GCT Ala	ACG Thr	AGG Arg 790
G* AAT Asn Asp	GAT Asp	AAC Asn	TTG Leu 725	CCA Pro	GGA Gly	ACA Thr	GAG Glu
GAT Asp	ACA Thr	ACT Thr	GAT Asp	ACG Thr 740	GTT Val	TGG Trp	AGT Ser
TCT Ser 675	TGT	CGA Arg	GGT Gly	GTG Val	ATA Ile 755	CAT His	ACA Thr
CCG	TCC Ser 690	AGA Arg	TCA	TCT Ser	GCC Ala	ACA Thr 770	TAC Tyr
GTA	GAC Asp	ATT 11e 705	CTA	TAT Tyr	GGT Gly	CTA	AAT Asn 785

FIG. 4H

2448	2496	2544	2592	2640	2688	2736
AAA Lys	GTG Val	ATA Ile	ATA Ile	TTG Leu 880	GCA Ala	GTC Val
TGT Cys 815	GAC	ACC Thr	TCA	AAA Lys	CTT Leu 895	TTT Phe
GTT Val	GGA G1y 830	TTT Phe	GTA Val	AAC Asn	GCA Ala	TTG Leu 910
GGT Gly	GAC Asp	AAT Asn 845	CCA Pro	TGT Cys	CAA Gln	ATG Met
ATA Ile	TCT Ser	ACA Thr	ACA Thr 360	AGA Arg	GAA Glu	TCC Ser
AAT Asn	CAT His	CCT Pro	ACT Thr 8	CCT Pro 875	ATT Ile	GAT Asp
TCT Ser 810	ACA Thr	ATA Ile	TAC Tyr	AAC Asn	ACT Thr 890	GTT Val
TAT Tyr	GTC Val 825	ACG Thr	GTT Val	GGT Gly	CAA Gln	GAG Glu 905
ACC Thr	AAC Asn	GTC Val 840	CAG Gln	AAT Asn	TGT Cys	ATG Met
ATA Ile	ATT Ile	AAT Asn	ATG Met 855	TGT Cys	GCA Ala	AAC Asn
GTC Val	TTT Phe	GGT Gly	TAC Tyr	GTT Val 870	TCT	GAA Glu
CCT Pro 805	GTT Val	ACT Thr	GAA Glu	TAC Tyr	GTG Val 885	CTT
GAA Glu	TTG Leu 820	AGC	GTT Val	AGA Arg	$\mathtt{TAT}$	AGA Arg 900
TGT Cys	GCT Ala	ATT Ile 835	CAA	GCA Ala	CAA Gln	GCC Ala
GAT Asp	GGT Gly	CCA Pro	GTG Val 850	$ ext{TGT}$	ACA Thr	GGT G1y
GTT Val	AAT Asn	CAA Gln	TCT	GAT Asp 865	TTA Leu	ATG Met
				٠		

#### FIG. 4I

2784	2832	2880	2928	2976	3024	3072	3120
ACA Thr	TCT Ser	CGT Arg 960	ACA Thr	GGT Gly	ATG Met	GCA Ala	GTG Val 1040
AGT Ser	GGT Gly	AAA Lys	GTA Val 975	GGT	ATC Ile	ACA Thr	GCC Ala
AAT Asn	GGT Gly	AGC Ser	GTT Val	ACT Thr 990	66C 61y 5	TAC Tyr	66C 61y
TTC Phe 925	ATA Ile	AAT Asn	AAA Lys	TGT Cys	AAT Asn 100	ATG Met 0	GGT Gly
GCG Ala	AGC Ser 940	CAT His	GAT Asp	CGT Arg	TAC Tyr	ACT Thr 102(	GGT Gly 5
GAG Glu	CCT	TCC Ser 955	TTT Phe	AAA Lys	$\mathtt{TAT}$	ATG Met	CTT Leu 103
GTT Val	TGG Trp	CCG Pro	CTT Leu 970	TAT Tyr	CAA Gln	AAG Lys	GCA Ala
TCT Ser	GAA Glu	CTA Leu	TTG Leu	GAT Asp 985	GCT Ala 0	GAC Asp	GGT Gly
GCA Ala 920	AAA Lys	ATA Ile	GAT Asp	GAA Glu	TGT Cys 100(	GCT Ala 5	TTA Leu
TTG Leu	TAC Tyr 935	GAT Asp	GAA Glu	GAT Asp	GTG Val	AAT Asn 101	ACA Thr )
AAA Lys	ATT Ile	AAA Lys 950	ATA Ile	GTT Val	TTG	GCT Ala	ATA Ile 103(
CTT Leu	CCT Pro	CTA Leu	GCT Ala 965	ACA Thr	GAC Asp	GTA Val	GGT Gly
GCC Ala	GAT Asp	GGT Gly	TCT Ser	GGT G1Y 980	GCA Ala	GGT Gly	GGT Gly
AAT Asn 915	TTA Leu	GGA Gly	GGT Gly	TTA Leu	ATA Ile 995	CCA Pro	GCA Ala
GAA Glu	AAT Asn 930	CTA Leu	TAT Tyr	GGT Gly	GAC Asp	CTA Leu 1010	CTT Leu
TCG Ser	GAA Glu	TGG Trp 945	AAG Lys	TCT Ser	$\mathtt{TAC}$	GTT Val	TCA Ser

#### FIG. 4J

3168	3216	3264	3312	3360	3408	3456	3504
GCT Ala	GCT	AAT Asn	GCG Ala	AGT Ser 1120	TCT Ser		GTG Val
GTT Val 1055	AAT Asn	GTT Val	AAA Lys	TTA Leu	AGT Ser 1135	GCA CAA Ala Gln 0	TTT Phe
TAT Tyr	GCT Ala 1070	AAG Lys	GCT Ala	GCT Ala	AGT Ser	GAT Asp 115(	GCA Ala 5
AAT Asn	CTG Leu	GGT G1Y 1085	GTT Val	CAA Gln	ATT Ile	GCT Ala	AAT Asn 116
CTT Leu	ATC Ile	TTT Phe	ACT Thr 1100	GGG G1y 5	GCC Ala	AGT Ser	CTT Leu
AGA Arg	CAG Gln	GCT Ala	GCC Ala	CAA Gln 1115	CAA Gln	CTG	GCA Ala
GCT Ala 1050	CAA Gln 5	CAG Gln	CTT Leu	AcA Thr	TTT Phe 1130	GAA Glu 5	ACA Thr
CAG Gln	AAC Asn 1065	ATT ACA Ile Thr 1080	GGT	AAC Asn	AAT Asn	GAC Asp 114	AGA CTT Arg Leu 1160
GTA Val	AAA Lys	ATT 11e 108(	CAA Gln	GTC Val	AAT Asn	CTT Leu	
GCA Ala	AAT Asn	AAC Asn	TCA Ser 1095	GTT Val 0	CAA Gln	AGG Arg	GGT G1y
GTA Val	TTG Leu	GGT Gly	ACA Thr	GAT ASP 111(	TTG Leu 5	AAC Asn	ACA Thr
GCA Ala 1045	GTA Val	ATT 11e	CAA G1n	CAA Gln	CAA G1n 112	$ extstyle{T}$	ATT Ile
TTT Phe	GAT ASP 1060	GCT	CAT	GTG Val	GTA Val	ATT 11e 114	CTG Leu
CCT Pro	ACT Thr	. CAA Gln 1075	ATA Ile	AAA Lys	ACA Thr	GAT Asp	AGG Arg 1155
ATA Ile	CAA Gln	AAT. Asn	GCT Ala 1090	GCA Ala	CTT Leu	AGT	GAT Asp
GCT Ala	CTA	TTC Phe	GAT Asp	TTG Leu 1105	CAC His	ATT Iie	GTT Val

### FIG. 4K

ACC AGA CAA GCA GAG GTT AGG GCT AGT AGA CAA CTT 3552	3TT AAT GAA TGT GTT AGG TCT CAG TCT CAG AGA TTC 3600	AAT GGT ACA CAT TTG TTT TCA CTA GCA AAT GCA GCA 3648	ATT TTC TTT CAT ACA GTA CTA TTA CCA ACA GCT TAT 3696	SCT TGG TCA GGT ATT TGT GCT TCA GAT GGC GAT CGC 3744	STC GTT AAA GAT GTG CAG TTG ACG TTG TTT CGT AAT 3792	FTC TAT TTG ACC CCC AGA ACT ATG TAT CAG CCT AGA 3840	rcr Gar TTT GTT CAA ATT GAA GGG TGT GAT GTG TTG 3888	ACT GTA ATT GAT TTG CCT AGT ATT ATA CCT GAC TAT 3936
Thr Arg Gln Ala Glu Val Arg Ala Ser Arg Gln Leu	7al Asn Glu Cys Val Arg Ser Gln Ser Gln Arg Phe	Asn Gly Thr His Leu Phe Ser Leu Ala Asn Ala Ala	Ile Phe Phe His Thr Val Leu Leu Pro Thr Ala Tyr	Ala Trp Ser Gly Ile Cys Ala Ser Asp Gly Asp Arg	Val Val Lys Asp Val Gln Leu Thr Leu Phe Arg Asn	Phe Tyr Leu Thr Pro Arg Thr Met Tyr Gln Pro Arg	Ser Asp Phe Val Gln Ile Glu Gly Cys Asp Val Leu	Thr Val Ile Asp Leu Pro Ser Ile Ile Pro Asp Tyr
1175	1190	1205	1225	1240	1255	1270	1285	1305
CAA Gln 1175	GAA Glu	GGT ACA Gly Thr	TTT Phe	TCA Ser	AAA Lys 1255	TTG Leu 0	GAT TTT Asp Phe	ATT Ile

#### FIG. 4L

3984 4032 4080 4128 4176 4224 4272 320 び Arg 1440 Lys 1360 AGA Phe GGA G1yAIAG GTA Val TTT CCA TAT AAT Asn Pro TyrATT / Ile / 1375 GTA Val AGA Arg Thr TAT Tyr TGT Arg ACC CysGAA Glu AGA TYrACT Cys AGT Ser Ala Thr GTA TGT TAC TCA Ser ACC Thr Val GCA 1405 Asn ' G1yGAA GTA Val GGT TGT CysAsn Asp GAT AAT AAC AGG Arg 1420 1340 ATA Ile  $\operatorname{Thr}$ Phe ATT Ile LLL Phe ATT Ile CTA Leu ACA TTC Glu GAA Glu 1355 TCT Ser 1435 Gly Leu Arg 390 AGC ATT CIC GGTSer GAG AGA Ile Leu TTA ATT ( Ile ) 1370 ~ u Asn 1385 1 AAT ATA Ile CAC TTTPhe His Asp GAT TTA Ile Leu ATA CTCLeu Leu CysCysTGTAsp GCC Ala CTGTGTLeu GAC Asp GAC CTT 1400 1320 CTA Leu Cys $\mathbb{L}G\mathbb{L}$ Asp TGG Trp TGC CysCAA Leu GAT CTT Gln Thr ACA Phe (1415) 1335 AGT Ser TLL ATT ile TGG Trp TTTGlu GAA Glu GAA Phe GTT Val G1y : Glu : 1350 Leu GGA GTA CLL GTG Val CTA Leu GAA Glu GAA ACT Thr 1365 Leu ACA TTA GGTTyr Leu CCTGlyThr AAT TAT CTG Gln Pro CAA Val Asr 13B0 GTC Trp ACT Leu TGL Cys Thr TGG TTA Asn GTA ACT Thr AAT Val 11e / S ATT CCIThr TTA Leu Pro 1395 Pro Gly Leu ACT CTG Asn CCA GGT AAC 11e 1 Trp ( ATA TGG ATA Ile Asn Trp CAT AAT Asp ACA  $\operatorname{Thr}$ TGG GAC His 1345 Leu Leu AAT Asn TGC Cys Cys 142 TTA CTA Lys ATT Ile TGC AAC Asn AAA

4365 TAA

62

43

CAC His

GTC Val

CAT

5

His

GTG Val

AAA

GAA

Glu

ATT Ile

Pro

Glu

Tyr ( 1445

TYT

Glu

Phe

Gln

CCA

GAA

TAT

TAT

GAA

TTT

CAA

S

Lys 1450

#### FIG. 5A

TS FIPV, nucleotides 1- 4365 [SEQ ID NO: 25] TS FIPV, amino acids 1- 1454 [SEQ ID NO: 26]

TS-BP, nucleotides\* 1- 2246 [SEQ ID NO:27] TS-BP, amino acids\* 1- 748 [SEQ ID NO:28]

48. ACA Thr His 15 CAC TAC TyrTCA TGT Cys Leu TTA Leu TTG Leu TTG 10 CTC Leu TGC CysACT GTA Val 5 Leu CIC GTG Val ATT Ile Met ATG

96 CAA Gln ACA Thr 44 GTT Val 30 AAC Asn GTT Val CAA Gln ATA Ile Cys 25 TGC GAA Asn AAT AAT Asn ACA Thr  $\operatorname{Thr}$ ACA 20 AGT Ser Leu TIG GTT Val

7 14, Phe TTTAAC Asn AGT Ser Phe 45 TTT Leu CTG TTTPhe Asp GAT AGA Arg ATC I1e 40 Leu CTT Asn AAC GAA Glu Asn AAT G1Y 35 GGC GCT TTG

92  $\leftarrow$ GTG Val GAG ACA Thr CCT Pro TYTTAC TAT TyrGGT G1yGGT Gly GTT Val GTT Val 55 GTA Val AGT GGA Gly GAA Glu GAA Glu 50 AAA Lys

40 O TTT Phe 80 TYYTAT CAG Gln LLL Phe GCC Ala ACT Thr 75 ACT Thr CGA Arg GCT ACA Thr A 90 Ar AG TCT TGC CysAAC Asn TAC TyrTGG Trp 65 288 AGC Ser Asn 95 AAT GAA Glu ATG GCC Ala GAA Glu Met 90 ATG GTT Val TTTPhe TAT TYrPhe TTTGCC Ala 85 CAT His ATA Ile AAT Asn AAT Asn

#### FIG. 5B

336	384	432	480	528	576
GAG Glu	CAA	CGC	TGT CVS 160	AAT	GCT
GGT	GTG	AATASn	ACA	GAC ASP 175	ACA
CAT His 110	GAT	AAA Lys	TCC Ser	ACG	GTT Val
GTG	GAT ASP 125	ACT	AATASn	CCC	TTT Phe
CAT	AGG	ATA Ile 140	TGG	ATA Ile	GAC Asp
TTT	TAT Tyr	TGC	CAG Gln 155 18	GTC	GAT
	GCT	GTG Val	AAC Asn 3-3	TCT Ser 170	AAT Asn
TTA Leu 105	TCG	TTA	TCC AAC Ser Asn A AR58-3 a.a.#1	TTC	TGG Trp 185
} 44	ATA 11e 120	GGG G1 V	ACC Thr	CCT	GAG Glu
CGT GGT AAA CCA Arg Gly Lys Pro mino acid #62 o	[	CAT His 135	AA TTC 1n Phg 50 ↑ AR58-3	ATT	CTT
GGT Gly aci		AAA Lys	CAA TTC Gln Phq 150 <del> </del> AR58-3	AAA Lys	GGT CTT Gly Leu
CGT Arg amino	ATT ATA Ile Ile	TTA	GAA Glu a.	AGA Arq 165	TAT
GCA Ala 100 46 to	GTT Val	CTT	TAT TVr	GAC Asp	ATC Ile 180
ACT GGT AAT GCA Thr Gly Asn Ala 100 97 of WSU 1146 FIPV in 58-3 corresponds to	AGT Ser 115	CCC CTT Pro Leu	AAC TAT Asn TVr	GCT GAC Ala Asp	AAA Lys
GGT Gly f WS in	ì		ATT Ile		GGA ACA AAA Gly Thr Lys
ACT Thr 97 o FIPV COFF	CCT GTT Pro Val	CAA AGG Gln Arg 130	CAT His 145	ACG GGT Thr Gly	GGA G1y

#### FIG. 5C

624	672		720	768	816	864	912
TTT	GAA Glu	acid 1146; #189	TAC Tyr 240	GAT Asp	TCA Ser	CTT Leu	CCA Pro
TGG	TGG		$\mathtt{TAT}$ $\mathtt{TY}$	GAA Glu 255	ACA Thr	TTG	CAA Gln
AATAsn	ACC	/ amino com WSU -3 a.a.	ACT Thr	TGT Cys	CCG Pro 270	TTC Phe	AAT Asn
ACT Thr 205	GCT Ala	FIPV amino 23 from WSU AR58-3 a.a.	TTC Phe	TTA Leu	GCT Ala	TGG Trp 285	ACA Thr
AAT Asn	ACT Thr 220	#223 AR	AAC Asn	GAA Glu	TTT Phe	AAT Asn	GTA Val 300
ATC Ile	AGC Ser		TCT Ser 235	$\mathtt{TAT}$	GTA Val	AAT Asn	TTT Phe
AAC Asn	TCA Ser		GTT Val	ACC Thr 250	AAT Asn	TTT Phe	AGG Arg
TTG	CGC		GGT Gly	AAA Lys	ACC Thr 265	AGT Ser	66C 61y
CAC His 200	TCA		CAA Gln	CTA Leu	GCT Ala	TTT Phe 280	AGT Ser
TAT TVE	TAT TVE 215		TAC Tyr	GGT Gly	$\mathtt{TAT}$	GGA Gly	GTT Val 295
TCT	TTG		GCT Ala 230	AAT Asn	GGC G1y	GAT Asp	TTT Phe
CGT Ara	CTT		$\mathtt{TAT}$	ACC Thr 245	ACT Thr	CCT	ACT Thr
GGT Gly	ACA Thr		GCA Ala	AAC Asn	TGC Cys 260	ATA Ile	TCC Ser
AGT Ser 195	GTC Val		GCT Ala	AAT Asn	CAT Hìs	TAC Tyr 275	AGT Ser
ATT	AAT Asn 210		AGT Ser	TTA Leu	GAA Glu	GGT Gly	AAT Asn 290
TAT	AAC Asn		TAC Tyr 225	AAG Lys	TAT Tyr	GGT Gly	ACA Thr

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096	1008	1056	1104	1152	1200	1248	1296
GCA Ala '320	GTG	ACT Thr	ACA Thr	AGT Ser	GAC ASP 400	$\mathtt{TAT}$	TGG
C* GTA GCA Val Ala Ala*320	GGT G1Y 335	TTC Phe	AAT Asn	GTG Val	ACT Thr	AAA Lys 415	AAG Lys
GTA Val	AAT Asn	AAT Asn 350	CTG Leu	ACA Thr	ATA Ile	CTT Leu	AGT Ser 430
GGT	TGT Cys	CTT Leu	TCA Ser 365	GAC Asp	GGC	GCT Ala	ATT Ile
TTT Phe	CAA Gln	AAC Asn	TTT Phe	AGT Ser 380	TTC	ACA Thr	GCT Ala
AGT Ser 315	AGC Ser	TTC Phe	GTA Val	$\mathtt{TAT}$	CCG Pro 395	GGC	ATT Ile
CCC	TTT Phe 330	AGA Arg	ACA Thr	TGT Cys	ATC Ile	AAT Asn 410	GAA Glu
GTG Val	CAG Gln	ATT Ile 345	GCT Ala	TCA Ser	GAA Glu	TAC	AAG Lys 425
CCA	GCA Ala	GTT Val	GGT G1y 360	ATT Ile	GGT	CTT Leu	GTA Val
TGG Trp	GGT Gly	GAT Asp	ATG Met	GAA Glu 375	$\mathtt{TAT}$	GTA Val	AGT Ser
TTG Leu 310	GAA Glu	GTG Val	GGT Gly	CTT	AGT Ser 390	TAT Tyr	CCC
TGC Cys	TTT Phe 325	ACA Thr	TCT	ATT Ile	$\operatorname{TAC}$	TGT Cys 405	CCA
AAT Asn	TGT Cys	AAC Asn 340	CAA Gln	GTC Val	TCT	TAC Tyr	TTA Leu 420
ATT Ile	TTT Phe	AAT Asn	GTA Val 355	GGT Gly	AGT	CGA	ACA Thr
TTG	GAA Glu	TTA Leu	GAT Asp	GGT G1y 370	TCT Ser	CCA Pro	GGA G1y
TTA Leu 305	CAA Gln	TCT Ser	GCA Ala	ACA Thr	GAG Glu 385	GGA Gly	TTA Leu

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1344	1392	1440	1488	1536	1584	1632	1680
ATT Ile	TGG Trp	AAC Asn 480	ATT Ile	GTT Val	CCT Pro	ATG Met	ATC Ile 560
CCT Pro	TTT Phe	GAA Glu	AAC Asn 495	CCT	TTA Leu	GGT	AAC Asn
TTT Phe	GCT Ala	GTT Val	AAT Asn	TAT TYr 510	TTA Leu	CTT Leu	AGT
ACA Thr 445	GGA	CAA Gln	ATT Ile	TTT Phe	GTG Val 525	GAT	CTA
AGC Ser	AGT Ser 460	GTA Val	CAC His	GGA G1y	GTT Val	ATT Ile 540	ACA Thr
TTT Phe	GTT Val	TTA Leu 475	AGT	AAT A9n	AGT	ACC Thr	TCG Ser 555
TTC Phe	GGT G1y	GCA Ala	AAC Asn 490	AAT Asn	AAG Lys	ATA Ile	GCC Ala
AATAsn	ACT Thr	GAA Glu	TGT	TTG Leu 505	AAT Asn	AAT Asn	ATA Ile
TAC Tyr 440	ACC Thr	ACT Thr	TAT Tyr	AAT Asn	GTT Val 520	GTC Val	CCC Pro
GGT Gly	TTA Leu 455	TAT	ACG Thr	GCT Ala	TTC	GCT Ala 535	CAA Gln
AAT Asn	AAT	TCG Ser 470	GTG Val	ACT Thr	GGT Gly	ACC Thr	GGT G1Y 550
ATT Ile	TTT Phe	ACA Thr	AAT Asn 485	CTT	GTA Val	$ ext{TAC}$	TAT Tyr
$\mathtt{T}\mathtt{A}\mathtt{T}$	TCT Ser	TAC	AAA Lys	CAA Gln 500	GAA	ACA Thr	GGT G1y
rrr Phe 435	ATA Ile	GCT Ala	ATT Ile	TCT Ser	AGT Ser 515	rrc Phe	AGT Ser
CAT	TGT Cys 450	ATT Ile	GCT Ala	TGT Cys	TCA Ser	TTT Phe 530	CTT Leu
GGC	GAT ASD	ACA Thr 465	ACA Thr	AAA Lys	GCT Ala	AGC Ser	AAG Lys 545

#### FIG. 5F

1728	1776	1824	1872	1920	1968	2016
TCT Ser	TGG Trp	GCT Ala	AAT Asn	GCT Ala 640	GTT Val	GGT
CGT Arg 575	TTA Leu	ACA Thr	AAC	GGT	CAG Gln 655	GTG Val
ATT Ile	TCT Ser 590	GCT Ala	TTG	GTT Val	GAG Glu	ATA Ile 670
$ ext{TGT}$	AGT	GAG Glu 605	AAA Lys	CCT Pro	AAT Asn	AAC Asn
TAC	AAA Lys	TTA	GAT Asp 620	AGT	ACC Thr	GAC
GTG Val	TGC Cys	GTT	TTT Phe	TTG Leu 635	AGA Arg	GGA G1y
GAT ASP 570	ACT Thr	GAT Asp	TCA	TCG Ser	ACA Thr 650	GAA G1u
ACT Thr	TCC Ser 585	ACG Thr	TTC Phe	TTG	CGT Arg	GAA G1u 665
AAT Asn	CAT His	TGC Cys 600	CCT	TGT Cys	GCA Ala	TAT Tyr
AAC Asn	GTT Val	GAC Asp	TGT Cys 615	TTC Phe	GCT Ala	ATA Ile
GAT ASP	$\mathtt{TAT}$	CAA Gln	ACT Thr	<b>A</b> * ACG Thr <b>Lys</b> 630	GTT Val	G* ATA Ile Val*
CAG Gln 565	GTT Val	AAT Asn	GGT Gly	AAC Asn	GAT ASP 645	TAT Tyr
ATG Met	TCA Ser 580	TTT Phe	ACT Thr	TTT Phe	TTT Phe	CTA Leu 660
CCA Pro	TTC Phe	ATT Ile 595	AAA Lys	ACT Thr	AAG Lys	AGT Ser
CTA Leu	CAA Gln	AAT Asn	ATA Ile 610	TTG	TGC Cys	GTT AGA Val Arg
ACA Thr	AAC Asn	GAC	GTT Val	TAC TYr 625	AAT Asn	GTT Val

2064	2112	2160	2208	2256	2304	2352	2400
CTA Leu	ATT Ile	TCA Ser 720	ATT Ile	GAT	GGT	TAT Tyr	GAT ASP 800
CAC His	GGT Gly	ACA Thr	GTC Val 735	ATT Ile	TTA	ATA Ile	AAC Asn
CTA	GTT Val	TAC	GGT Gly	GTT Val 750	CTG	TCT Ser	AGT Ser
GTG Val 685	GGT G1y	TAT Tyr	GAT	GCT Ala	GAA Glu 765	TAC	GAC
TCT Ser	ACT Thr 700	TTA	AGT Ser	GCG Ala	AGT Ser	TAC TYr 780	ATT Ile
TTG	AGA Arg	GGC G1 <i>Y</i> 715	GTT Val	CAA Gln	AAC Asn	TAT TYr	GCA Ala 795
GAT	GGT	AGT Ser	AAT Asn 730	GCA Ala	ATT Ile	TTT Phe	ACT Thr
CAC His	$\mathtt{TAT}$	CTT	AAA Lys	AGC Ser 745	TCC	AAT Asn	GGC
CTG Leu 680	ATA Ile	CTA Leu	rrr Phe	GTA Val	ACT Thr 760	CCT Pro	CGT Arg
$_{\rm G1Y}$	AAT Asn 695	ACG Thr	GGC G1y	GAT Asp	ATG Met	ACA Thr 775	ACT
AGC Ser	TAC	AGT Ser 710	TTA	TGT Cys	GCT Ala	ACG Thr	AGG Arg 790
GAT Asp	GAT Asp	AAC Asn	TTG Leu 725	CCA	GGA Gly	ACA Thr	GAG Glu
GAT	ACA Thr	ACT Thr	GAT Asp	ACG Thr 740	GTT Val	TGG Trp	AGT Ser
TCT Ser 675	TGT Cys	CGA Arg	GGT Gly	GTG Val	ATA I1e 755	CAT His	ACA Thr
CCG Pro	TCC Ser 690	AGA Arg	TCA	TCT Ser	GCC Ala	ATA Ile 770	TAC
GTA Val	GAC	ATT 11e 705	CTA Leu	TAT	GGT G1y	CTA Leu	AAT Asn 785

2448	2496	2544	2592	2640	2688	2736	2784
AAA Lys	GTG Val	ATA Ile	ATA Ile	TTG Leu 880	GCA Ala	GTC Val	ACA Thr
TGT Cys 815	GAC	ACC Thr	TCA	AAA Lys	CTT Leu 895	TTT Phe	AGT Ser
GTT Val	GGA G11 830	TTT Phe	GTA Val	AAC Asn	GCA Ala	TTG Leu 910	AAT Asn
GGT Gly	GAC Asp	AAT Asn 845	CCA Pro	TGT Cys	CAA	ATG Met	TTC Phe 925
ATA Ile	TCT Ser	ACA Thr	ACA Thr 860	AGA Arg	GAA Glu	TCC	GCG Ala
AAT Asn	CATHis	CCT Pro	ACT Thr	CCT Pro 875	ATT Ile	GAT Asp	GAG Glu
TCT Ser 810	ACA Thr	ATA Ile	TAC	AAC Asn	ACT Thr 890	GTT Val	GTT Val
TAT TYT	GTC Val 825	ACG Thr	GTT Val	GGT Gly	CAA Gln	GAG Glu 905	TCT
ACC Thr	AAC Asn	GTC Val 840	CAG Gln	AAT Asn	TGT Cys	ATG Met	GCA Ala 920
ATA Ile	ATT Ile	AAT	ATG Met 855	TGT	GCA Ala	AAC Asn	TTG
GTC Val	TTT Phe	GGT	$ extsf{TAC}$	GTT Val 870	TCT Ser	GAA Glu	AAA Lys
CCT Pro 805	GTT Val	ACT Thr	GAA Glu	$ extsf{TAC}$	GTG Val 885	CTT Leu	CTT
GAA Glu	TTG Leu 820	AGC Ser	GTT Val	AGA Arg	$\mathtt{T}\mathtt{A}\mathtt{T}$	AGA Arg 900	GCC Ala
TGT Cys	GCT Ala	ATT Ile 835	CAA Gln	GCA Ala	CAA	GCC Ala	AAT Asn 915
GAT	GGT Gly	CCA	GTG Val 850	TGT Cys	ACA Thr	GGT Gly	GAA Glu
GTT Val	AAT Asn	CAA Gln	TCT Ser	GAT Asp 865	TTA	~TG Met	TCG Ser

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2832	2880	2928	2976	3024	3072	GTG 3120 Val 1040	3168
TCT Ser	CGT Arg	ACA Thr	GGT Gly	ATG Met	GCA Ala	GTG Val 1040	GCT Ala
GGT Gly	AAA Lys 960	GTA Val 975	GGT Gly	ATC Ile	ACA Thr	GCC Ala	GTT Val 1055
GGT Gly	AGC Ser	GTT Val	ACT Thr 990	GGC G1Y 5	$\mathtt{T}\mathtt{A}\mathtt{C}$	66C 61y	TAT
ATA Ile	AAT Asn	AAA Lys	TGT Cys	AAT Asn 1005	ATG Met	GGT Gly	AAT Asn
AGC Ser	CAT	GAT Asp	CGT Arg	TAC Tyr	ACT Thr 102(	GGT Gly	CTT
CCT Pro 940	TCC Ser	TTT Phe	AAA Lys	$\mathtt{TAT}$	ATG Met	CTT Leu 1035	AGA Arg
TGG Trp	CCG Pro 955	CTT Leu 970	TAT Tyr	CAA Gln	AAG Lys	GCA Ala	GCT Ala 1050
GAA Glu	CTA	TTG	GAT Asp 985	GCT Ala	GAC Asp	GGT Gly	CAG Gln
AAA Lys	ATA Ile	GAT Asp	GAA Glu	TGT Cys 1000	GCT Ala	TTA Leu	GTA Val
TAC Tyr 935	GAT Asp	GAA Glu	GAT Asp	GTG Val	AAT Asn 1015	ACA Thr	GCA Ala
ATT Ile	AAA Lys 950	ATA Ile	GTT Val	TTG	GCT Ala	ATA Ile 103(	GTA Val 5
CCT Pro	CTA	GCT Ala 965	ACA Thr	GAC Asp	GTA	$_{\rm G1Y}$	GCA Ala 1049
GAT	GGT Gly	TCT Ser	GGT G1y 980	GCA Ala	GGT	GGT Gly	TTT Phe
TTA Leu	GGA Gly	GGT Gly	TTA Leu	ATA Ile 995	CCA Pro	GCA Ala	CCT
AAT Asn 930	CTA	TAT	GGT Gly	GAC Asp	CTA Leu 1010	CTT Leu 5	ATA Ile
GAA	TGG Trp 945	AAG Lys	TCT Ser	TAC	GTT Val	TCA Ser 1025	GCT Ala

#### FIG. 5J

CTA CAA ACT GAT GTA TTG AAT AAA AAC CAA CAG ATC CTG GCT AAT GCT Leu Gln Thr Asp Val Leu Asn Lys Asn Gln Gln Ile Leu Ala Asn Ala 1066  TTC AAT CAA GCT ATT GGT AAC ATT ACA CAG GCT TTT GGT AAG GTT AAT Phe Asn Gln Ala Ile Gly Asn Ile Thr Gln Ala Phe Gly Lys Val Asn 1070  GAT GCT ATA CAT CAA ACA TCA CAA GGT CTT GCC ACT GTT GCT AAA GCG ASp Ala Ile His Gln Thr Ser Gln Gly Leu Ala Thr Val Ala Lys Ala 1105  TTG GCA AAA GTG CAA GAT GTC AAC ACA CAA GGG CAA GCT TTA AGT Leu Ala Lys Val Gln Asp Val Val Asn Thr Gln Gly Gln Ala Leu Ser 11105  CAC CTT ACA GTA CAA TTG CAA AAT TTT CAA GCC ATT AGT AGT TCT His Leu Thr Val Gln Leu Gln Asn Phe Gln Ala Ile Ser Ser 1136  ATT AGT GAT ATT TAT AAC AGG CTT GAC GAA GCT GAT GCA CAA Ili35  ATT AGT GAT ATT TAT AAC AGG CTT GAC GAA GCT GAT GCA CAA Ili35  ATT AGT GAT ATT TAT AAC AGG CTT GAC GAA GCT GAT GCA CAA Ili36  III Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp Ala Glu Lie Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp Ala Glu Lie Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp Ala Glu Lie Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp Ala Glu Lie Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp Ala Glu Lie Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp Ala Glu Lie Ser Asp Ala Glu Lie Glu Asp Glu Lie Glu Asp Ala Glu Li	3216	3264	3312	3360	3408	3456
CAA ACT GAT GTA TTG AAT AAA AAC CAA CAG ATC CTG GCT GIN The Leu Ala 1060  AAT CAA GCT ATT GGT AAC ATT ACA CAG GCT TTT GGT AAG ASN GIN Ala Phe Gly Lys 1075  GCT ATA CAT CAA ACA TCA CAA GGT CTT GCT ACT GCT AID 1090  GCA AAA GTG CAA GTT GTT GTC AAC ACA GGT CTT GCT AID Ala ILO  GCA AAA GTG CAA GTT GTT GTC AAC ACA GGG CAA GCT AID Ala Lys Val GIN ASP Val Val ASN TTT CAA GCT ATT AA GTG CAA ATT AAT TTT CAA GCT ATT AGT CTT AID 1115  CTT ACA GTA CAA AAT AAT ATT CAA GCT ATT AGT CTT AID AND AID AND AND AND AND AND AND AND AND AND AN		AAT Asn		AGT Ser 1120	TCT	CAA Gln
CRA ACT GAT GTA TTG AAT AAA AAC CAA CAG ATC CTG GCT The Leu Asp Val Leu Asn Lys Asn Gln Gln Ile Leu Ala 1060  AAT CAA GCT ATT GGT AAC ATT ACA CAG GCT TTT GGT AAG ASn Gln Ala Ile Gly Asn Ile Thr Gln Ala Phe Gly Lys 1080  GCT ATA CAT CAA ACA TCA CAA GGT CTT GCC ACT GTT GCT Ala Ile His Gln Thr Ser Gln Gly Leu Ala Thr Val Ala 1090  GCA AAA GTG CAA GAT GTT GTC AAC ACA CAA GGC CAA GCT Ala Lys Val Gln Asp Val Val Asn Thr Gln Gly Gln Ala Ssr Asn Gln Gln Asn Asn Phe Gln Ala Ile Ser Leu Thr Val Gln Leu Gln Asn Asn Phe Gln Ala Ile Ser 1125  AGT GAT ATT TAT AAC AGG CTT GAC GAA CTG AGT GCT GAI Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Ser Ala Asp 1140	AAT Asn	GTT Val	AAA Lys	TTA Leu	AGT Ser 113	GCA Ala
CAA ACT GAT GTA TTG AAT AAA AAC CAA CAG ATC GIN Thr Asp Val Leu Asn Lys Asn Gln Gln Ile 1065  AAT CAA GCT ATT GGT AAC ATT ACA CAG GCT TTT ASN Gln Ala Phe 1075  GCT ATA CAT CAA ACA TCA CAA GGT CTT GCC ACT Ala Ile His Gln Thr Ser Gln Gly Leu Ala Thr 1090  GCA AAA GTG CAA GAT GTT GTC AAC ACA CAG GGG ATC ALA Leu Thr Gln Asp Val Val Asn Thr Gln Gly Leu Abe Gln Ala 1115  CTT ACA GTA CAA TTG CAA AAT AAT TTT CAA GCC Leu Thr Val Gln Leu Gln Asn Asn Ash	GCT Ala 1070	AAG Lys	GCT Ala	GCT Ala	AGT Ser	GAT Asp 115(
CAA ACT GAT GTA TTG AAT AAA AAC CAA CAG ATC GIN Thr Asp Val Leu Asn Lys Asn Gln Gln Ile 1065  AAT CAA GCT ATT GGT AAC ATT ACA CAG GCT TTT ASN Gln Ala Phe 1075  GCT ATA CAT CAA ACA TCA CAA GGT CTT GCC ACT Ala Ile His Gln Thr Ser Gln Gly Leu Ala Thr 1090  GCA AAA GTG CAA GAT GTT GTC AAC ACA CAG GGG ATC ALA Leu Thr Gln Asp Val Val Asn Thr Gln Gly Leu Abe Gln Ala 1115  CTT ACA GTA CAA TTG CAA AAT AAT TTT CAA GCC Leu Thr Val Gln Leu Gln Asn Asn Ash	CTG	GGT G1Y 1085	GTT Val	CAAGIN	ATT Ile	GCT Ala
CAA ACT GAT GTA TTG AAT AAA AAC CAA CAGGIN Thr Asp Val Leu Asn Lys Asn Gln Gln 1060  AAT CAA GCT ATT GGT AAC ATT ACA CAG GCT Asn Gln Ala 1075  GCT ATA CAT CAA ACA TCA CAA GGT CTT GCC Ala Ile His Gln Thr Ser Gln Gly Leu Ala 1090  GCA AAA GTG CAA GAT GTT GTC AAC ACA CAA Ala Lys Val Gln Asp Val Val Asn Thr Gln 1110  CTT ACA GTA CAA TTG CAA AAT AAT TT CAA Illo  CTT ACA GTA CAA TTG CAA AAT AAT TT CAA Illo  Leu Thr Val Gln Leu Gln Asn Asn Phe Gln 1125  AGT GAT ATT TAT AAC AGG CTT GAC GAA CTG Ser Asp Ile Tyr Asn Arg Leu Asp Glu Leu Tha	ATC Ile		ACT Thr 1100	666 61y	GCC Ala	AGT Ser
CAA ACT GAT GTA TTG AAT AAA AAC GIN Thr Asp Val Leu Asn Lys Asn 1060  AAT CAA GCT ATT GGT AAC ATT ACA Asn Gln Ala Ile Gly Asn Ile Thr Ser Gln Gly 1090  GCA AAA GTG CAA GAT GTG AAC AAC GTA GTT Ala Ile His Gln Thr Ser Gln Gly Asn Lys Val Gln Asp Val Val Asn Lill  CTT ACA GTA CAA TTG CAA AAT AST Leu Thr Val Gln Leu Gln Asn Asn 1125  AGT GAT ATT TAT ASC AGG CTT GAC SEr GAC SER GTA GTA GAT GTA ASN AST AST II125		GCT Ala		CAA Gln 1115	CAA Gln	CTG
CAA ACT GAT GTA TTG AAT AAA GIN Thr ASD Val Leu Asn Lys AAT CAA GCT ATT GGT AAC ATT ASN Gln Ala Ile Gly ASN Ile Ala Ile His Gln Thr Ser Gln 1090 GCA AAA GTG CAA GAT GTC GTC ATT GCT ATT GGT ASD Val Gln ASD Val Val Gln Leu Gln ASN 1125 AGT GAT ATT TAT AAC AGG CTT Ser ASD Ile Tyr ASN ATG Leu	CAA Gln	CAG Gln		ACA Thr	rrr Phe 113(	GAA Glu 5
CAA ACT GAT GTA TTG AAT AAA GIN Thr ASD Val Leu Asn Lys AAT CAA GCT ATT GGT AAC ATT ASN Gln Ala Ile Gly ASN Ile 1090  GCT ATA CAT CAA ACA TCA CAA Ala Ile GLy ASN Ile 1095  GCA AAA GTG CAA GAT GTT GTC AAC AAT Leu Thr Val Gln Leu Gln ASN Ills  AGT GAT ATT TAT AAC AGG CTT Ser Gln Ile Tyr ASN ATG CTT ASN ANG Ile Tyr ASN ANG Leu Ser ASP Ile Tyr ASN ANG Leu Ill40	AAC Asn 1065	ACA Thr	GGT	AAC Asn	AAT Asn	GAC ASP 114
CAA ACT GAT GTA TTG G1n Thr ASP Val Leu AAT CAA GCT ATT GGT ASn G1n Ala Ile G1y 1075 Ala Ile His G1n Thr 1090 GCA AAA GTG CAA GAT Ala Lys Val G1n Asp Leu Thr Val G1n Leu Thr Val G1n Leu AGT GAT ATT AAC Ser ASP Ile Tyr ASn 1140		ATT Ile 1080	CAA Gln	GTC Val	AAT Asn	CTT Leu
CAA ACT GAT GTA TTG G1n Thr ASP Val Leu AAT CAA GCT ATT GGT ASn G1n Ala Ile G1y 1075 Ala Ile His G1n Thr 1090 GCA AAA GTG CAA GAT Ala Lys Val G1n Asp Leu Thr Val G1n Leu Thr Val G1n Leu AGT GAT ATT AAC Ser ASP Ile Tyr ASn 1140	AAT Asn		TCA Ser 1095	4 1	CAA Gln	AGG Arg
CAA ACT GAT GTA G1n Thr Asp Val AAT CAA GCT ATT Asn G1n Ala Ile Ala Ile His G1n 1090 GCA AAA GTG CAA Ala Lys Val G1n Leu Thr Val G1n Leu Thr Val G1n Ser Asp Ile Tyr	TTG	GGT G1y		GAT ASP 111(	TTG Leu 5	AAC Asn
CAA ACT Gln Thr AAT CAA ASn Gln 1090 1090 GCA AAA Ala Lys Ala Lys Leu Thr Leu Thr Ser Asp	GTA Val	ATT	CAA Gln		CAA Gln 112	TAT Tyr
CAA ACT Gln Thr Asn Gln 1090 1090 CTT AAA Ala Ile Ala Lys Leu Thr Leu Thr Ser Asp	GAT ASP 1060	GCT Ala	CAT His	GTG Val	GTA Val	ATT 11e
CAA Gln AAT ASD 109( GCA Ala Ala Ala SCT Leu Leu Ser	ACT Thr	CAA Gln 107	ATA Ile	AAA Lys	ACA Thr	GAT Asp
CTA Leu Phe GAT ASP CAC His		AAT Asn	GCT Ala 1090	GCA Ala	CTT Leu	AGT Ser
	CTA	TTC	GAT	TTG Leu 1105	CAC His	ATT Iie

3552

CTT

CAA Gln

GCT AGT AGA Ala Ser Arg 1180

CAA GCA GAG GTT AGG Gln Ala Glu Val Arg 1175

AGA Arg

Thr

CAG ACT CTA 7 Gln Thr Leu 1 1170

TCT

ACC

3504

GTG

TTT

CTT AAT GCA

Val

Phe

Asn Ala 1165

Leu

CTT ACA GCA Leu Thr Ala

GGT AGA CTT

Arg I 1160

G1y

ACA Thr

ATT

CTG

GAT AGG

GTT

Ile

Leu

Arg 1 1155

Asp

Val

#### FIG. 5K

3600	3648	3696	3744	3792	3840
TTC 3 Phe 1200	GCA 3 Ala	TAT 3 TYr	CGC 3 Arg	AAT 3 Asn	AGA 3 Arg 1280
AGA 1 Arg E	GCA (Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala	GCT 1 Ala 1	GAT (Asp A	CGT AArg A	CCT A
CAG Z	AAT (Asn i	ACA (Thr 1230	GGC	TTT Phe	CAG Gln
TCT Ser	GCA Ala	CCA Pro	GAT Asp 1245	TTG Leu 60	$\mathtt{TAT}$
CAG Gln	CTA Leu	TTA Leu	TCA Ser	ACG Thr 126	ATG Met
TCT Ser 1195	TCA Ser	CTA Leu	GCT Ala	TTG Leu	ACT Thr 1275
AGG Arg	ттт Рће 1210	GTA Val 5	TGT Cys	CAG Gln	AGA Arg
GTT Val	TTG Leu	ACA Thr 1225	GGT ATT Gly Ile 1240	GTG Val	CCC Pro
TGT	CATHis	CAT His	GGT G1y 124(	AA GAT ys Asp 1255	ACC Thr
GAA Glu	ACA Thr	TTT Phe	TCA Ser	AAA Lys 125	TAT TTG Tyr Leu 1270
AAT Asn 1190	GGT Gly	TTC Phe	TGG Trp	GTT Val	TAT Tyr 127(
GTT Val	AAT (Asn (1205	ATG ATT Met ile 1220	GCT Ala	GTC Val	TTC Phe
AAG Lys	GGT Gly	ATG Met 122(	ACA Thr 5	CTT	AAG Lys
GAC Asp	TGT Cys	66C 61y	GTA Val 123!	GGA Gly	GAC ASD
AAA Lys	TTC Phe	AAT Asn	ACT Thr	ттс Рће 125(	GAT ASP
GCC Ala 1185	GGA G1y	CCA	GAA Glu	ACT Thr	CTA Leu 1265

3936

 $\mathtt{TAT}$ 

Tyr

CCT GAC 'Pro Asp '1310

ATA Ile

ATT Ile

TTG CCT AGT Leu Pro Ser

GAT

ATT Ile

GAG ACT GTA Ala Thr Val 1300

AAC

TTT GTC Phe Val

Asn

Leu ]

Asp

3888

TTG

GAT

Leu

GTG 7 Val 1

Asp

TGT

GGG G1y

GAA Glu

CAA

ATT ( Ile ( 1290

Gln

GTT Val

TTT Phe

TCT GAT Ser Asp 1285

Ser

AGT

ACT Thr

GCA Ala

GTT Val

3984	4032	4080	4128	4176	4224	1272	1320	4362
CCA Pro	TAT Tyr	AAG 4 Lys 1360	AAT Asn		TTT ( Phe	GGA 4272 Gly	AGA 432 Arg 1440	
AGA Arg	ACC Thr	GAA Glu	ATT 11e 1375	TAT Tyr	GTA Val	TGT Cys	AGA Arg	
TAC	ACA Thr	TCG Ser	AAC Asn	ACT Thr 1390		TGT	AGT Ser	CAC His
AAT TAC AGA Asn Tyr Arg 1325	AAC Asn	AGG Arg	GAT Asp	GAA Glu	GTA GTA Val Val 1405	GGT Gly	TGT	GTC Val
GAA Glu	TTC Phe 1340	TTT Phe	ATT Ile	ATT Ile	TTA Leu	ACA Thr 1420	ATA Ile	GTG CAT Val His
TTA Leu	ATT Ile	GAG Glu 1355	CTC Leu	AGA Arg	GGT Gly	AGC Ser	TCT Ser 1435	GTG Val
ATA Ile	GAT Asp	TTA	ATT I1e 1370	AAT Asn 5	ATA Ile	TTT Phe	CAC	AAA Lys 1450
GAC ASP	CTT	GAC	GCC Ala	CTC Leu 1389	CTG Leu 0	TGT Cys	TGT Cys	GAA Glu
CAA GAC Gln Asp 1320	ACA Thr 5	GAT ASP	CTT Leu	TGG Trp	CTA Leu 140(	TGC Cys 5	TGT	ATT Ile
GTT Val	TTT Phe 1335	ATT Ile	GAA	GAA Glu	TGG Trp	TTT Phe 1415	AGT Ser	CCA Pro
ACT Thr	GAA Glu	GAA Glu 1350	GTA Val	CTT	GTG Val	CTA	GGA G1Y 143(	GAA Glu 5
CAA	CCT	GGT Gly	ACA Thr 1365	AAT Asn	TAT Tyr	CTG	TTA	TAT Tyr 144!
AAT Asn 5	GTA Val	ACT	ACT Thr	GTC Val 138(	TGG Trp 5	TTA Leu	TGT Cys	AAT Asn
ATT Ile 1315	ACT Thr	CTG	AAC Asn	TTA	CCT Pro 139	CCA Pro	66T 61Y	GAA
ATT GAC Ile Asp	TGG . Trp 1	AAT Asn	CTA CAT Leu His	ACA Thr	TGG	ATA 11e 1410	ATA Ile 5	TTT Phe
ATT Ile	AAC Asn	TTA Leu 1345	CTA	AAT Asn	AAA Lys	TGC	TGC Cys 142!	CAA Gln

TAA

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#### FIC. 6

							. 22 - . 24 -						- ·
688			III 2JA (	) siH		_			ren j			_	)
	qsA	qzA	yrd YCC	TYY	slA	zəs	əĮI	TYr	əĮI	IJG	IsV		
ረ <b>ፒ</b> Ѣ			ATT u9J	GJX	siH	Γλα		пәп	Pro				
9 <b>S</b> ħ	<del>-</del>	Бре	CAA	CIn	TYr	nsA	əII	siH	Arg	nsA	Γλε	лųТ	SII
	PXA	qsA	GCT Ala	CJA	ДŲД	CYS		zəs	nsA	Trp			
₹ ₹			TAA naA 371										
٤٧3	_	IsV	TTT	qsA	qaA	nsA		GIn	$\Gamma$ e $n$	$GJ\lambda$	TYr		_
213			AAC naA		siH	TYr		prA	CIV	Ser	əII		
TS9			TAT TYT 31S	$\Gamma$ e $n$		Дµк		nzA	nsA	Бұб	Trp		
TL9							ФÐ			•	_	Ser	· <del>-</del>

# FIG. 7A FECV, Nucleotides

NO:31] NO:32]

9 9

CEC]

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48	ون 6	144	192	240	288	336
TAC CAC ACT Tyr His Thr 15	GTA ACA CAA Val Thr Gln 30	CAA AGT TTT Gln Ser Phe	ACA GAG GTG Thr Glu Val	GAG TAT TTT Glu Tyr Phe 80	GAA AAT AGC Glu Asn Ser 95	CAT GGT GAA His Gly Glu 110
TGC TCG Cys Ser	GTT AAC Val Asn	TTG TTT Leu Phe 45	TAC CCT Tyr Pro 60	GCC TAT Ala Tyr	GCT ATG Ala Met	CAT GTT His Val
TTG TTA Leu Leu 10	AGA CAA Arg Gln	GAC TTT Asp Phe	GGT TAT Gly Tyr	ACC ACT Thr Thr 75	ATG GAA Met Glu 90	TTA TTT Leu Phe
CTC TTG Leu Leu	GAT TGT ASP CYS 25	ATT AGA Ile Arg 40	GTT GGT Val Gly	GCA ACT Ala Thr	TTT GAT Phe Asp	CCT CTA Pro Leu 105
ACT TGC (Thr Cys 1	AAC AAT Asn Asn	AAC CTT Asn Leu	GTA GTT Val Val 55	AGA ACA Arg Thr 70	TTT TAT Phe Tyr	T GGT AAA g Gly Lys AR58-3
CTC GTA I Leu Val	ACG TCA Thr Ser 20	AAT GAA Asn Glu	GGA ATT Gly Ile	TGC TCT Cys Ser	CAT GCC His Ala 85	AAT GCA CGT Asn Ala Arg 100 J 1:146 Id #62 of AR
ATT GTG Ile Val	TCG AGT Ser Ser	GCT GGC Ala Gly 35	GAA GAA Glu Glu 50	TAC AAC Tyr Asn	AAT ATA Asn Ile	GT 7 1y 7 WSt acj
ATG Met	GTT Val	TTA	AAA Lys	TGG Trp 65	AAT Asn	ACT G Thr G ↑ 97 of amino

## FIG. 7B

384	720
CAAGIn	כבר טטט שממ מממ שטמ ששמ טטש
GTG Val	T C C
GAT Asp	<b>6</b> 6 6
GAT GAT ASP ASP 125	T T
GGG G1Y	עריידי ע
TAT Tyr	י ביינו
GCT Ala	ביורים. מיוים
TCA	⊈לילילי
ATA Ile 120	でした からい
TAT Tyr	F A C
ATA Ile	ממט
ATC Ile	لابلىل بلىل
ATC Ile	ليليل
AGT Ser 115	<b>₫</b>
GTT Val	טטע
CCT Pro	<b>4 4 7</b>

V 43 CGC Arg Asn HH Lys ACT Thr A1"I I1e 140 TGC Leu rra Leu 666 617 CAT His 135 GAA Glu 1.1A Leu Leu CCA AGG Arg 130 Gln

480 TGTCys 160 ATA Ile TCC Ser GAT Asp Trp TGG CAG Gln 155 AAC Asn AGC Ser ACC Thr TTC Phe Thr 150 ACC Asn AAC TAT Tyr Asp GAC ATT Ile AAT Asn 145

528 AAT Asn Asp 175 GAT AGG Arg CCC ATA Ile GTC Val TCT Ser 170 TTCPhe CCTPro ATT Ile AAA LysArg 165 AGA GAC Asp AAT Asn GGT G1yACG Thr

576 GCG Ala ACA GTT Val 190 TTT GAA Glu GAT Asp AAT Asn 1rp TGG GAG Glu CTTLeu GGG G1y TAT ATC I1e 180 Lys AAA ACA Thr G1yGGA

624 TTTPhe Trp TGG AAC Asn Asn 205 AAT AAT Asn ATC Ile AAC Asn TGG Trp AAT Asn 200 TAT TyrTCTSer CGT Arg GGT Gly Ser 195 AGT ATT Ile TAT TYr

672 GAA Glu Trp TGG ACC Thr GCT ACT Thr 220 AGC TCA Ser CGC Arg TCA **Tyr** 215 TAT TTGLeu CTT Leu ACA Thr GTC Val Asn 210 AAT AAC Asn

#### FIG. 7C

720	768	816	864	912	0.96	1008	1056
TAC Tyr 240	GAT Asp	GTG Val	CTT Leu	CCA Pro	GCA Ala 320	GTA Val	ACC Thr
TAT TYr	GAG Glu 255	ACT Thr	TTG Leu	CAA Gln	GCA Ala	GGT G1Y 335	TTC Phe
ACT Thr	TGT Cys	CCA Pro 270	TTT Phe	AAC Asn	GTA Val	AGT Ser	AAT Asn 350
TTC Phe	TTT Phe	GCT Ala	TGG Trp 285	ACA Thr	GGT Gly	TGT Cys	CTT Leu
AAC Asn	GAA Glu	TTT Phe	AAT Asn	GTA Val 300	TTT Phe	CAG Gln	AAT Asn
TCT Ser 235	TAT Tyr	GTC Val	AAC Asn	TTT Phe	AGT Ser 315	AGT Ser	TTC Phe
GTT Val	ACC Thr 250	AAT Asn	TTT Phe	AGA Arg	CCC Pro	TTT Phe 330	AGA Arg
GGT Gly	AAA Lys	ACT Thr 265	AGT Ser	GGC G1y	GTG Val	CAG Gln	ATT Ile 345
CAA Gln	TTA	GCC Ala	ттт Рће 280	AGT Ser	CCA Pro	GCG Ala	GTT Val
TAC Tyr	GGT Gly	$\mathtt{TAC}$	GGA G1y	CTT Val 295	TGG Trp	GGT	GAT Asp
GTT Val 230	AAT Asn	GGC G1y	GAT Asp	TTT Phe	TTA Leu 310	GAA Glu	GTA Val
TAT Tyr	ACC Thr 245	ACT Thr	CCT Pro	ACT Thr	TGC	TTT Phe 325	ACA
GCA Ala	AAC Asn	TGC Cys 260	ATA Ile	TCC	AAC Asn	TGT Cys	AAC Asn 340
GCT Ala	AAT Asn	TAT Tyr	TAC Tyr 275	AGC	GTT Val	TTT Phe	TTA AAT Leu Asn
AGT Ser	TTA Leu	GAA G1u	GGT	AAT Asn 290	TTA	GAA	
TAC Tyr 225	AAG Lys	TAT Tyr	GGA Gly	ACA Thr	CTA Leu 305	CAA	TCT Ser

#### FIG. 7D

1104	1152	1200	1248	1296	1344	1392	1440
ACA Thr	AGT Ser	GAT ASP 400	TAT Tyr	TGG Trp	ATT Ile	TGG Trp	AAC Asn 480
AAT Asn	GTG Val	ACT Thr	AAG Lys 415	AAG Lys	CCT	TTT Phe	GAA Glu
TTG Leu	ACA Thr	ATA Ile	CTT Leu	AGT Ser 430	TTT Phe	GCT Ala	GTT Val
TCG Ser 365	GAC Asp	66C G1y	GCT Ala	ATT Ile	ACA Thr 445	GGA	CAA Gln
TTT Phe	AAT Asn 380	TTC Phe	ACA Thr	GCT Ala	AGC Ser	AGT Ser 460	GTA Val
GTG Val	TAT Tyr	CCG Pro 395	GGC Gly	ATT Ile	ттт Рће	GAT	TTA Leu 475
ACA Thr	TGT Cys	ATT Ile	AAT Asn 410	GAA Glu	TTC Phe	GGT	GCA Ala
GCT Ala	TCA Ser	GAA Glu	TAC	AAG Lys 425	AAT Asn	ACT Thr	GAG
GGT G1y 360	GTT Val	GGT Gly	CTT Leu	GTA Val	TAC Tyr 440	ACC Thr	ACT Thr
ATG Met	GAA Glu 375	TAT Tyr	GTA Val	AGT Ser	GGT G1y	TTA Leu 455	TAC Tyr
GGT Gly	CTT	AGT Ser 390	TAT Tyr	CCT	AAT Asn	AAC Asn	TCG Ser 470
TCT Ser	ATT Ile	TAC	TGT Cys 405	CCA Pro	ATT Ile	TTT Phe	ACA Thr
CAA Gln	GTC Val	TTT Phe	TAC	TTA Leu 420	TAT Tyr	TCT Ser	TAC
GTA Val 355	GGT G1y	AGT Ser	CGG Arg	ACA Thr	TTT Phe 435	ATA Ile	GCT Ala
GAT Asp	GGT G1Y 370	TCT Ser	CCA Pro	GGA Gly	CAT His	TGT Cys 450	ATT Ile
GCA	ACG Thr	GAG Glu 385	GGA Gly	TTA	GGC	GAT Asp	ACA Thr 465

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1488	1536	1584	1632	1680	1728	1776
ATT Ile	GTT Val	CCT Pro	ATG Met	ATT Ile 560	TCT Ser	TGG Trp
AAC Asn 495	CCT Pro	TTA Leu	GGT	AAC Asn	CGT Arg 575	TTA Leu
AAT Asn	TAT Tyr 510	TTA	CTT Leu	AGT Ser	ATT Ile	TCT Ser 590
ATT Ile	TTT Phe	GTG Va1 525	GAT Asp	TTA Leu	TGT Cys	AGT Ser
CAC His	GGA G1y	GTT Val	ATT Ile 540	ACA Thr	$ extstyle{T}$	AAG Lys
AGT Ser	AAT Asn	AGT	ACC Thr	TCA Ser 555	GTG Val	TGT Cys
AAC Asn 490	AAT Asn	AAG Lys	ATA Ile	GCA Ala	GAT ASP 570	ATT Ile
TGT Cys	TTG Leu 505	AAT Asn	AAT Asn	ATA Ile	ACA Thr	TCT Ser 585
$\mathtt{T}\mathtt{A}\mathtt{T}$	AAT Asn	GTG Val 520	ATC Ile	CCC Pro	AAC Asn	CAT His
ACG Thr	GCT Ala	CTT Leu	GCT Ala 535	CAA Gln	AAT Asn	GTT Val
GTG Val	ACT Thr	GGT Gly	ACC Thr	GGT G1Y 550	GAT Asp	$\mathtt{T}\mathtt{A}\mathtt{T}$
AAG Lys	CTT Leu	GTT Val	CAT His	TAT Tyr	CAG Gln	GTT Val
AAA Lys 485	CAA Gln 500	GAG Glu	GCA Ala	GGT Gly	ATG Met 565	TCA Ser
ATT Ile	TCT Ser	AGT Ser 515	TTC	AGC Ser	CCA Pro	ттт Рће 580
GCT Ala	TGT Cys	TCA Ser	ттт Рће 530	CGT Arg	CTA	CAG Gln
ACA Thr	AAG Lys	GCT Ala	ATC Ile	AAG Lys 545	ACA Thr	AAC Asn
A						

1824

GCT Ala

ACA Thr

GCC Ala

TTA

GTT Val

GAT Asp

ACG Thr

TGC Cys 600

GAA Glu

CAA Gln

AAT Asn

TTT Phe

ATT 11e 595

AAT Asn

GAC Asp

GAT ASP 605

1872	1920	1968	2016	2064	2112	21,60	2208
AAT	GCT Ala 640	GTT Val	GGT Gly	CTA	ATT Ile	TCA Ser 720	ATC Ile
AAC Asn	GGC Gly	CAA Gln 655	GTT Val	CACHis	GGT Gly	ACA Thr	GTC Val 735
TTG	GTT Val	GAG Glu	ATA Ile 670	CTA	GTT Val	TAC	GGT
AAA Lys	CCT Pro	AAT Asn	AAC Asn	GTG Val 685	GGT Gly	TAT Tyr	GAT Asp
GAT Asp 620	AGT Ser	ACC Thr	GAC Asp	TCT Ser	ACT Thr 700	TTA Leu	AGT Ser
TTT Phe	TTG Leu 635	AGA Arg	GGA Gly	TTG Leu	AGA Arg	GGC G1Y 715	GTT Val
TCA	TCG	ACA Thr 650	GAA Glu	GAT Asp	GGT Gly	AGC	AAT Asn 730
TTC Phe	TTG	CGT Arg	GAA Glu 665	CAC His	$\mathtt{TAT}$	CTT Leu	AAA Lys
CCT Pro	TGT Cys	GCA Ala	TAT Tyr	CTG Leu 680	ATA Ile	CTA	TTT Phe
TGT Cys 615	TTC	GCC Ala	ATA Ile	GGT Gly	AAT Asn 695	ACG Thr	GGC Gly
ACT Thr	AAG Lys 630	GTT Val	GTA Val	AGC Ser	$ extsf{TAT}$	AGT Ser 710	TTA Leu
GGT	AAC Asn	GAT Asp 645	TAT Tyr	AAT Asn	GAG Glu	AAC Asn	TTG Leu 725
ACT Thr	TTT Phe	TTT Phe	CTA Leu 660	GAT Asp	ACA Thr	ACT Thr	GAT
AAG	ACT Thr	AAG Lys	AGT Ser	TCT Ser 675	TGT Cys	CAA	GGT
ATA Ile 610	TTA	TGC Cys	AGA Arg	CCG Pro	TCC Ser 690	AGA Arg	TCA
GTT Val	TAC Tyr 625	AAC Asn	GTT Val	GTA Val	GAC Asp	ATT Ile 705	CTA Leu
			-				

# FIG. 7G

2256		
GAT	Asp	
ATT	Ile	
GTT	Val 750	
4CT	Ala	
BDB	Ala	
CAA	Gln	
GCA	Ala	
AGC	Ser 745	
	Val	
GAT	Asp	
TGT	Cys	
CCA	Pro	
ACG	Thr 740	
GTG	Val	
TCT	Ser	
TAT	TYr	

2304		
GGT	Gly	
TTA	Leu	
	Leu	
GAA CTG	Glu	765
: AGT	Ser	
AC	Asn	
TCC ATT A	Ile	
$_{ m TCC}$	Ser	
ACT	$\operatorname{Thr}$	760
TG	Met	
A GCT A	Ala	
GTT GGA	G1y	
GTT	Val	
ATA	Ile	755
CCC	Ala	
GGT	G1Y	

2592		
ATA	Ile	
TCA	Ser	
	Val	
CCA	Pro	
ACA	$\operatorname{Thr}$	860
$\cup$	$\operatorname{Thr}$	
GTT ACC	TYY	
GTT	Val	
CAG	Gln	
ATT	Ile	855
TAC	Tyr	
GTC GAA	Glu	
GTC	Val	
	Gln	
GTG	Val	850
TCT	Ser	

### FIG. 7H

	2640	2688	2736	2784	2832	2880	2928	2976
	TTG Leu 880	GCA Ala	GTT Val	ACA Thr	TCT Ser	CGT Arg 960	ACT	GGT
	AAA Lys	CTT Leu 895	TTC	AGT Ser	GGT	AAA Lys	GTA Val 975	GGT Gly
	AAC Asn	GCA Ala	TTG Leu 910	AAT Asn	GGT	AGC Ser	GTT Val	ACA Thr 990
	TGT Cys	CCA Gln	ATG Met	TTC Phe 925	ATA Ile	AAT Asn	AAq Lys	TGT Cys
	AGA Arg	GAG Glu	TCC Ser	GCG Ala	AAC Asn 940	CAT	GAT Asp	CGT Arg
	CCT Pro 875	ATT Ile	GAT Asp	GAG Glu	CCT	TCC Ser 955	TTT Phe	AAA Lys
	AAC Asn	ACT Thr 890	GTT Val	GTT Val	TGG Trp	CCG	CTT Leu 970	$\mathtt{T}\mathtt{A}\mathtt{T}$
•	GGT Gly	CAA Gln	GAG Glu 905	TCT Ser	GAA Glu	CTG	TTG	GAT Asp 985
	AAT Asn	TGT Cys	ATG Met	GCA Ala 920	AAA Lys	ATA Ile	GAC Asp	GAA Glu
	TGC	GCA Ala	AAC Asn	TTG	TAC TYr 935	GAC	GAA Glu	GAT Asp
	GTT Val 870	TCT	GAA Glu	AAA Lys	ATT Ile	AAA Lys 950	ATA Ile	GTT Val
	TAC Tyr	GTT Val 885	CTT Leu	CTT Leu	CCT	TTA	GCT Ala 965	ACA Thr
	AGA Arg	$\mathtt{TAT}$	AGA Arg 900	GCC Ala	GAC Asp	GGT Gly	TCT	GGT G1y 980
	GCA Ala	CAA Gln	GCC Ala	AAT Asn 915	TTA Leu	GGA Gly	CGT	TTA Leu
	TGT Cys	ACA Thr	GGT Gly	GAA Glu	AAT Asn 930	TTA	TAT Tyr	$_{\rm GGT}$
	GAT ASP 865	TTA	ATG Met	TCT Ser	GAA Glu	TGG Trp 945	AAG Lys	TCT Ser

### FIG. 71

3024	3072	3120	3168	3216	3264	3312	3360
ATG . Met	GCA . Ala	GTT Val 1040	GCTAla	GCT	AAT	GCA	AGC Ser 1120
ATC Ile	ACA Thr	GCC Ala	GTT Val 1055	AAT Asn	GTT Val	AAA Lys	TTA Leu
GGC G1y 5	TAC Tyr	GGC Gly	TAT Tyr	GCT Ala 107(	AAG Lys 5	GCT Ala	GCT Ala
AiT Asn 1005	ATG Met	GGT	AAT Asn	CTG Leu	GGC Gly 108	GTT Val 0	CAA Gld
TAC	ACT Thr 1020	GGT Gly	CTT Leu	ATC Ile	TTT Phe	ACT Thr 110(	666 61y 5
TAT Tyr	ATG Met	CTT Leu 1035	AGA Arg	CAG Gln	GCA Ala	GCA Ala	CAA Gln 1115
CAA Gln	AAG Lys	GCA Ala	GCT Ala 1050	CAG Gln 5	CAG Gln	CTT Leu	ACA Thr
GCT Ala 0	GAC Asp	GGT Gly	CAA Gln	AAC Asn 106	ACA Thr	AAA GGT Lys Gly	AAC Asn
TGT Cys 1000	GAT ASP	CTA Leu	GTT Val	AAA Lys	ATT 11e 108(	$\Gamma$	GTC Val
GTG Val	AAT Asn 1015	ACA Thr 0	GCA Ala	AAT Asn	AAC Asn	TCA Ser 109	GTT Val 0
TTA Leu	GCT Ala	ATA Ile 103(	GTA Val 5	TTG	GGT Gly	ACA Thr	GAT ASP 111
GAC Asp	GTA Val	GGT Gly	GCA Ala 104	GTA Val 0	ATT Ile	CAA Gln	CAA
GCC Ala	GGT Gly	GGT	TTT Phe	GAT Asp 106	GCT Ala 5	CAT His	GTG Val
ATA 11e 995	CCT Pro	GCA Ala	CCT Pro	ACT Thr	CAA G1n 107	ATA Ile 0	AAA Lys
GAC Asp	TTA Leu 1010	CTT Leu 5	ATA Ile	CAA Gln	AAT Asn	GCT Ala 109(	GCA Ala
TAT Tyr	GTG	TCT Ser 1025	GCT	CTA	TTC	GAT	TTG Leu 1105

#### FIG. 7J

3408		
TCT	Ser	
AGC TCT	Ser	1135
AGT	Ser	
ATT	Ile	
GCC	Ala	
CAA	Gln	
TTT	Phe	1130
AAT	Asn	
AAT AAT	Asn	
CAA	Gln	
TTG	Leu	. •
GTA CAA	Gln	1125
GTA	Val	
ACA	$\operatorname{Thr}$	
CAC CTA ACA	Leu	
CAC	His	

- 3456 CAA Gln Ala GCA Asp 7 GAT GCT Ala AGT Ser Leu CTG Glu GAA Asp (1145) GAC CTT Leu Arg AGG AAC Asn ATT TAT Ile Tyr 1140 GAT Asp AGT Ser ATT Ile
- 3504 GTG Val Phe TTT Ala GCA Asn 1165 AAT CTT Leu GCA Ala ACA Thr Leu CTTArg 1160 AGA GGA Gly ACA Thr ATT Ile Leu CTG Arg 1155 AGG GAT Asp GTT Val
- 552  $\sim$ CTT Leu CAA Gln Arg AGA AGT Ser GCT / Ala ( 1180 Arg AGG GTT Val Glu GAG GCG Ala Gln 1115 CAA Arg AGA ACC Thr CTA Leu ACT Gln 71170 CAG TCT
- 3600 Phe 1200 TTT AGA Arg CAG Gln TCTSer CAA Gln Ser (1195 TCCAGA Arg GTTVal TGT CysGlu GAA Asn ( AAT GTT Val AAG Lys Asp GAC Lys AAG Ala 1185 GCC
- 3648 GCA Ala Ala 11215 GCA AAT Asn GCA Ala CTTLeu TCA Ser 1210 LLL Phe TTG Leu CAC His ACA Thr GGTAsn ( 1205 AAT GGT  $\bar{\mathtt{Gly}}$ TGTCysTTCPhe GlyGGA
- 3698 TAT TYYGCT Ala 1230 Thr ACG Pro CCA Leu TTA CTA Leu GTG 1225 Thr ACA CAT His TTTPhe TTC Phe ATT Ile Met 1220 ATG GGC G1yAAT Asn CCA Pro
- 3744 CGC Arg GAT Asp G1yGGC Asp (1245 GAT TCA Ser GCT TGTcys ATT Ile G1Y 1240 GGT CCA Pro TGG Trp GCT Ala ACA GTA Val 1235 ACT Thr GAA Glu

# FIG. 7K

3792 AAC Asn CGT Arg TTTPhe Leu TTG Thr 1260 ACG Leu TTG Gln CAG GTA Val GAT Asp Lys 7 AAA GTT Val GTC Val CTT Leu G1yGGA TTT ( Phe ( 1250 ACT

3840 Arg 1280 AGA CCT Pro CAG Gln TAT TYrMet ATG ACT Thr 127 Arg AGA Pro CCC ACT Thr Leu TTGTAT TYY 1 TTC Lys AAG Asp GAC Asp GAT Leu 1 1265 CTA

 $\infty$ 3888 TTG Leu Val 1295 GTG GAT Asp TGC Cys GGG Gly GAG Glu Ile (1290 ATT CAA Gln GTT Val TTTPhe GAT Asp Ser 1285 TCTAGT Ser ACT Thr GCA Ala GCT

9 393  $\mathtt{TAT}$ TYTCCT GAC Pro Asp 1310 ATA Ile ATT Ile AGT Ser CCT Pro 1305 Leu TIG Asp GAC ATT Ile GTA Val GCA ACT Ala Thr Ala ' 1300 AAT Asn GTC Val TTTPhe

3984 CCA Pro AGA Arg Tyr TAC Asn 1325 AAT GAA Glu TTA Leu ATA Ile GAT Asp 1320 CAA Gln GTT Val ACT CAG Gln ATC AAT Ile Asn 1315 GAC Asp ATT Ile

4032 TAT TYrACC Thr GCA Ala Asn TTT AAC 1340 Phe ATT Ile GAT Asp CTTLeu ACA Thr Leu 1335 TTG Glu GAA CCT Pro GTA Val TGG ACT Trp Thr Trp ( AAC Asn

4080 Lys 1360 AAG GAA Glu TCA AGG Arg TTTPhe Glu 1355 GAA TTA Leu Asp GAC GAT Asp ATT Ile Glu 1350 GAA  $_{\rm GGT}$ ACT Leu CTG Asn AAT Leu 1345 TTA

4128 AAC Asn S ATT 11e 137 AAC Asn Asp GAC ATT Ile CTC ATT ( Ile 1 1370 GCC Ala CTT Leu GAA Glu GTA Val Thr 1365 ACT Thr ACC AAT Asn CAC His Leu CTA

4176	4224	4272	4320	4362	4365
GTA Val	TTT Phe	GGA G1y	AGA Arg 1440		
TAT Tyr )	ATA Ile	TGT Cys	AGA Arg		
ACT Thr 1390	GTA Val	TGT Cys	AGT Ser	CAC His	
GAA Glu	GTA Val 1405	GGT Gly	TGT	GTC Val	
ATT Ile	TTA Leu	ACA Thr 1420	ATG Met	CAT His	
AGA Arg	GGC Gly	AGT Ser	TCT Ser 1435	GTG Val	
AAT Asn 5	ATA Ile	TGT	CAC	AAA Lys 1450	
CTC Leu 1385	CTA Leu	TGT Cys	TGT Cys	GAA Glu	
TGG Trp	CTA CTA Leu Leu 1400	TGC	TGT Cys	ATT Ile	
GAA Glu	TGG Trp	TTT Phe 1415	AGT Ser	CCA Pro	
CTT Leu	GTG Val	CTA	GGA AGT Gly Ser 1430	TAT GAA CCA Tyr Glu Pro 1445	
AAT Asn 0	TAT	TTG	TTA Leu	TAT TYr 1445	
GTC Val 138	TGG Trp	TTA	TGC Cys	AAT Asn	
TTA Leu	CCT TGG Pro Trp 1395	CCA TTA Pro Leu	GGT Gly	GAA AAT Glu Asn	
ACA Thr	TGG	ATA I1e 1410	ATA Ile	TTT Phe	
AAC Asn	AAA Lys	TGC Cys	TGC Cys 1425	CAA Gln	TAA

#### FIG. 8

	48	96	144	192	240	288	336	377
	GTT Val	AGG Arg	ATT Ile	GGT Gly	ACA Thr 80	ATT Ile	AATASn	
	CCT Pro 15	CAA Gln	CAT His	ACG Thr	GGA	TAT TYr 95	AAC Asn	
	GAG Glu	CAA Gln 30	CGC Arg	TGT	AAT Asn	GCT Ala	TTT Phe 110	GA
	GGT	GTG	AAT Asn 45	ACA Thr	GAC Asp	ACA Thr	TGG Trp	TGG Trp 125
	CAT	GAT ASP	AAA Lys	TCC Ser 60	ACG Thr	GTT Val	AAT Asn	ACC Thr
	GTG Val	GAT Asp	ACT Thr	AAT Asn	CCC Pro 75	TTT Phe	ACT Thr	GCT
NO:53] NO:54]	CAT His 10	AGG Arg	ATA Ile	TGG Trp	ATA Ile	GAC Asp 90	AAT Asn	ACT Thr
ON GH	TTT Phe	TAT Tyr 25	TGC Cys	CAG Gln	GTC Val	GAT Asp	ATC Ile 105	AGC Ser
[SEQ 1	TTA Leu	GCT Ala	GTG Val	AAC Asn	TCT Ser	AAT Asn	AAC Asn	TCA Ser 120
7 2	TTA Leu	TCG Ser	TTA Leu	TCC Ser 55	TTC	TGG Trp	TTG	CGC
$\frac{1-37}{1-12}$	CCA Pro	ATA Ile	GGG G1y	ACC Thr	CCT Pro 70	GAG Glu	CAC	TCA
ជ ស ស	AAA Lys 5	$\mathtt{TAT}$	CAT	TTC	ATT Ile	CTT Leu 85	TAT Tyr	TAT Tyr
nucleotides amino acids	$\texttt{GGT}\\ \texttt{G1} \textbf{y}$	ATA Ile 20	AAA Lys	CAA	AAA Lys	GGT	TCT Ser 100	TTG
nucle amino	CGT Arg	ATT Ile	TTA Leu 35	GAA	AGA Arg	TAT Tyr	CGT Arg	CTT Leu 115
2,5	GCT Ala	GTT Val	CTT Leu	TAT TYY 50	GAC Asp	ATC Ile	GGT Gly	ACA Thr
UCD-2,	AAT Asn 1	AGT Ser	CCC	AAC Asn	GCT Ala 65	AAA Lys	AGT Ser	GTC Val

### FIG. 9A

	•				
	TCA Ser	ATA Ile	CTT Leu	GGA G1y	TGG Trp 65
	TGT Cys	TGC Cys 25	AAC Asn	GAA Glu	GTG Val
	TTA Leu	GAA Glu	GAA Glu	GAA Glu 50	GAG Glu
	TTG Leu 10	AAT Asn	AAT Asn	AAA Lys	ACA Thr
3]	TTG	AAT Asn	GGC G17 35	TTT Phe	CCT Pro
NO:33] NO:34]	CTC	ACA Thr	GCT Ala	AAC Asn	TAC Tyr 60
O O	TGC Cys	ACA Thr 20	TTG	AGT Ser	TAT Tyr
OES]	ACT Thr	AGT Ser	CAA Gln	TTT Phe 45	GGT Gly
2246 748	GTA Val	TTG	ACA Thr	CTG Leu	GGT Gly
Sequence s 1- 224 s 1- 748	CTC Leu	GTT Val	GTA Val 30	TTT Phe	GTT Val
sus Se tides acids	GTG Val	ACA Thr	AAC Asn	GAT Asp	GTT Val 55
	ATT Ile	CAC His	GTT Val	AGA Arg	GTA Val
Consen Nucleo Amino	ATG Met	TAC	CAA Gln	ATC Ile 40	AGT Ser

156

117

39

78

195

234

CAG Gln

TTT Phe

GCC Ala

ACT Thr 75

ACT

CGA Arg

GCT

ACA Thr

AGA Arg 70

TCT Ser

TGC

TAC AAC Tyr Asn 273

GAA Glu

ATG Met 90

GTT Val

TTT Phe

TAT TYT

TTT Phe

GCC Ala 85

CAT His

ATA Ile

AAT AAT Asn Asn

TTT Phe 80

TAT

## FIG. 9B

312	351	390	429	468	507	546	585
CCA Pro	ATT Ile	AGG Arg 130	AAT Asn	TGG Trp	TTC Phe	GGT Gly	AGT Ser 195
AAA Lys	GTT Val	CAA Gln	AAA Lys	CAG Gln 155	CCT Pro	TAT Tyr	ATT Ile
GGT Gly	AGT Ser 115	CAA Gln	ACT Thr	AAC Asn	ATT Ile	ATC 116 180	TAT $TYT$
CGT	GTT Val	GTG Val	ATA Ile 140	TCC Ser	AAA Lys	AAA Lys	GCT Ala
GCA Ala 100	CCT	GAT Asp	TGC Cys	ACC Thr	AGA Arg 165	ACA Thr	ACA Thr
AAT Asn	GAG Glu	GAT ASP 125	GTG Val	TTC Phe	GAC Asp	GGA Gly	GTT Val 190
GGT Gly	GGT Gly	AGG Arg	TTA Leu	CAA Gln 150	GCT Ala	AAT Asn	TTT Phe
ACT Thr	CAT His 110	$\mathtt{T}\mathtt{A}\mathtt{T}$	GGG G1y	GAA Glu	GGT G1y	GAC Asp 175	GAC Asp
AGC	GTG Val	GCT Ala	CAT His 135	$\mathtt{TAT}$	ACG Thr	ACG Thr	GAT Asp
AAT Asn 95	CAT	TCG Ser	AAA Lys	AAC Asn	TGT Cys 160	CCC Pro	AAT Asn
GAA Glu	TTT Phe	ATA 11e 120	TTA Leu	ATT Ile	ACA	ATA Ile	TGG Trp 185
ATG Met	TTA Leu	$\mathtt{TAT}$	CTT Leu	CAT His 145	TCC Ser	GTC Val	GAG Glu
GCC Ala	TTA Leu 105	ATA Ile	CCC	CGC Arg	AAT Asn	TCT Ser 170	CTT

# FIG. 9C

624	663	702	741	780	819	858
TTT Phe	GCT Ala	GTT Val	GGT Gly	TGC Cys 260	GGT	TTC Phe
TGG Trp	ACT Thr 220	GGT Gly	AAT Asn	CAT His	TCA Ser	TGG Trp 285
AAT Asn	AGC Ser	CAA Gln	ACC Thr 245	GAA Glu	ACA Thr	AAT Asn
ACT Thr 205	TCA Ser	TAC	AAC Asn	$\mathtt{TAT}$	CCG Pro 270	AAY Asn
AAT Asn	CGC Arg	GCT Ala 230	AAT Asn	GAT Asp	GCT Ala	TTT Phe
ATC Ile	TCA	TAT Tyr	TTA Leu	GAA Glu 255	TTT Phe	AGT Ser
AAC Asn	TAT Tyr 215	GCA Ala	AAG Lys	TGT Cys	GTA Val	TTT Phe 280
TTG	TTG	GCT Ala	TAC Tyr 240	TTA Leu	AAT Asn	GGA G1y
CAC His 200	CTT	AGT Ser	$\mathtt{TAT}$	GAA	ACC Thr 265	GAT
TAT Tyr	ACA Thr	TAC Tyr 225	ACT Thr	TAT Tyr	GCT Ala	CCT
TCT Ser	GTC Val	GAA Glu	TTC Phe	ACC Thr 250	TAT Tyr	ATA Ile
CGT Arg	AAT Asn 210	TGG Trp	AAC Asn	AAA Lys	GGC Gly	TAC TY <i>r</i> 275
GGT Gly	AAC Asn	ACC Thr	TCT Ser 235	CTA Leu	ACT Thr	$\texttt{GGT}\\ \texttt{G1Y}$

#### FIG. 9D

897		
TTT	Phe	
AGG	Arg	
CCC	G1Y	
AGT	Ser	
GTT	Val	295
TTT	Phe	
ACT	Thr	
TCC	Ser	
AGT	Ser	
ACA AAT AGT	Asn	290
ACA	Thr	
CLL	Leu	
TTG	Leu	

9 93 CCA Pro TGG Trp Leu 310 TTG  $\mathbb{T}GC$ CysAsn AAT ATT Ile TTG TTA Leu 305 CCA CAA Gln AAT Asn ACA Thr GTA Val 300

57 g TTT Phe 325 TGT CysTTT Phe GAA Glu CAA Gln GCA Ala 320 GCA Ala GTA Val  ${\tt GGT} \\ {\tt G1y}$ TTT Phe Ser 315 AGT CCC GTG Val

1014 TTA Leu TCT Ser GTG GGT G1y 335 AAT Asn TGT Cys CAA Gln AGC TTT Phe 330 CAG Gln GCA Ala  $\texttt{GGT}\\ \texttt{G1} \texttt{Y}$ GAA Glu

1053 TTC Phe AAT Asn 350 CTTLeu AAC Asn TTC AGA Arg ATT Ile 345 GTT Val GAT Asp GTG Val ACA Thr Asn 340 AAC AAT Asn

1092 TTT Phe GTA Val ACA Thr GCT Ala GGT G1y 360 ATG Met  ${\tt GGT}\\ {\tt G1Y}$ TCT Ser CAA Gln GTA Val 355 Asp GAT GCA Ala ACT Thr

 $\leftarrow$ 1 113 TCA ATT Ile GAA Glu 375 CTT ATT GTC Val GGT Gly G1Y 370 GGT ACA Thr ACA Thr AAT Asn CTG Leu TCA Ser 365

1170 AGT Ser 390 TAC TYYTCT AGT Ser TCT GAG Glu 385 AGT Ser GTG Val ACA Thr Asp GAC AGT Ser 380 TAT TyrTGT

### FIG. 9E

1209 CGA Arg CCA Pro Ğly GGA Asp 400 GAC ACT Thr ATA Ile GGC Gly Phe TTC CCG Pro 395 ATC Ile GAA Glu GGT Gly TAT Tyr

1248 TAT TYYLys 415 AAA CTT Leu GCT ACA Thr GGC Gly AAT Asn 410 TAC TyrLeu CTT GTA Val TAT TYY $\mathbb{L}G\mathbb{L}$ Cys 405 TAC

1287 ATT Ile GCT ATT Ile GAA Glu Lys 425 AAG GTA Val AGT Ser Pro CCC CCA Pro TTA Leu 420 ACA GGATTA

1326 TTCPhe AAT Asn TAC **TYT** 440 GGT Gly AATASn ATT Ile TAT TYYPhe 435 LLL CAT His GGC Gly TGG AAG Lys Ser 430 AGT

1365 Leu 455 TTA AAT Asn TTTPhe Ser TCT ATA Ile Cys 450 TGT GRT Xaa ATT Ile CCT Pro TTTPhe ACA Thr 445 AGC Ser TTTPhe

1404 TAC TyrGCT ATT Ile ACA Thr 465 Trp TGG TTTPhe GCT Ala Gly GGA AGT Ser 460 GTT Val  $\texttt{GGT}\\ \texttt{G1}\underline{\texttt{Y}}$ ACT Thr ACC Thr

1443 ACA Thr Asn 480 AAC GAA Glu GTT Val CAA Gln GTA Val Leu 475 TTA GCA Ala GAA Glu ACT TAT TYYTCG Ser 470 ACA Thr

1482 AAT Asn ATT Ile CAC His AGT Ser Asn 490 AAC TGT CysTAT Tyr ACG Thr GTG Val AAT Asn 485 Lys AAA ATT Ile GCT

## FIG. 9F

1521	1560	1599	1638	1677	1716	1755	1794
AAT Asn	GTT Val 520	TAC Tyr	CTT Leu	AAC Asn	TAC Tyr	TCC Ser 585	CAA
AAT Asn	TTC Phe	ACA Thr	AAG Lys 545	AGT Ser	GTG Val	CAT His	AAT Asn
TTG Leu 505	GGT Gly	TTC Phe	ATG Met	CTA Leu	GAT Asp 570	GTT Val	TTT Phe
AAT Asn	GTA Val	TTT Phe 530	GGT Gly	ACA Thr	ACT Thr	$\mathtt{TAT}$	АТТ Ile 595
GCT Ala	GAA Glu	AGC	CTT Leu	TCG Ser 555	AAT Asn	GTT Val	AAT Asn
ACT Thr	AGT Ser 515	CCT Pro	GAT Asp	GCC Ala	AAC Asn	TCA Ser 580	GAC Asp
CTT Leu	TCA Ser.	TTA	ATT Ile 540	ATA Ile	GAT	TTC Phe	TGG Trp
CAA Gln 500	GCT Ala	TTA Leu	ACC Thr	CCC	CAG Gln 565	CAA Gln	TTA Leu
TCT Ser	GTT Val	GTG Val 525	ATA Ile	CAA	ATG Met	AAC Asn	TCT Ser 590
$^{ m TGT}$	CCT Pro	GTT Val	AAT Asn	GGT G1y 550	CCA Pro	TCT	AGT
AAA Lys	TAT $TYX$ $510$	AGT Ser	GTC Val	TAT Tyr	CTA Leu	CGT Arg 575	AAA Lys
ATT Ile	TTT Phe	AAG Lys	GCT Ala 535	GGT Gly	ACA Thr	ATT Ile	TGC Cys
AAC Asn 495	GGA Gly	AAT Asn	ACC Thr	AGT	ATC Ile 560	TGT	ACT Thr

# FIG. 9G

1833	1872	1911	1950	1989	2028	2067	2106
AAA Lys	AAT Asn	CCT Pro	ACA Thr 650	ATA Ile	GAT	GAC Asp	GTT Val
ATA Ile 610	AAC Asn	AGT Ser	CGT	GTA Val	TCT Ser 675	CTA Leu	GGT
GTT Val	TTG	TTG Leu 635	GCA Ala	$\mathtt{TAT}$	CCG	CAC	ACT Thr 700
GCT	AAA Lys	TCG	GCT Ala	CTA Leu 660	GTA Val	CTA	AGA Arg
ACA Thr	GAT Asp 620	TTG	GTT Val	AGT Ser	GGT	GTG Val 685	GGT Gly
GCT Ala	TTT Phe	TGT Cys	GAT ASP 645	AGA Arg	GTG Val	TCT	TAT $TYT$
GAG Glu 605	TCA	TTC Phe	TTT Phe	GTT Val	ATA Ile 670	TTG	ATA Ile
TTA Leu	TTC Phe	AAG Lys 630	AAG Lys	GTT Val	AAC Asn	GAT Asp	AAT Asn 695
GTT Val	CCT Pro	AAC Asn	TGC Cys	CAG Gln 655	GAC Asp	CAC His	TAC Tyr
GAT Asp	TGT Cys 615	TTT Phe	AAT Asn	GAG Glu	GGA Gly	CTG Leu 680	GAT Asp
ACG Thr	ACT	ACT Thr	GCT Ala 640	AAT Asn	GAA Glu	GGT G1y	ACA Thr
TGC Cys 600	GGT Gly	TTG	GGT G1y	ACC Thr	GAA G1u 665	AGC Ser	TGT Cys
GAC Asp	ACT Thr	TAC TYT 625	GTT Val	AGA Arg	TAT Tyr	RAT Xaa	TCC Ser 690
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### FIG. 9H

2145	2184	2223	2246			
GGC Gly 715	TTT Phe	CCA				
AGT Ser	GGC G1y	ACG Thr 740				
CTT Leu	TTA	GTG Val				
CTA	TTG Leu 725	TCT Ser				
ACG Thr	GAT	$\mathtt{TAT}$				
AGT Ser 710	GGT Gly	ATT Ile	CC			
AAC Asn	TCA Ser	GTC Val 735	GCG Ala			
ACT Thr	CTA Leu	GGT Gly	CAA Gln			
CGA Arg	TCA Ser 720	GAT	GCA Ala			
AGA Arg	ACA Thr	AGT	AGC Ser 745		• .	
ATT Ile 705	TAC Tyr	GTT Val	GTA Val			
ATT Ile	TAT Tyr	AAT Asn 730	GAT			
GGT	TTA	AAA Lys	TGT			

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